

ANNUAL REGISTER

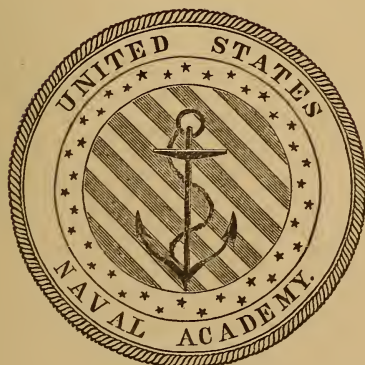
OF THE

UNITED STATES NAVAL ACADEMY,

ANNAPOLIS, MD.

THIRTY-FIFTH ACADEMIC YEAR,

1884-85.



WASHINGTON:
GOVERNMENT PRINTING OFFICE.

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THE UNITED STATES NAVAL ACADEMY.

The United States Naval Academy was founded in 1845, by the Hon. George Bancroft, Secretary of the Navy, in the administration of President James K. Polk. It was formally opened October 10, of that year, under the name of the Naval School, with Commander Franklin Buchanan as Superintendent. It was placed at Annapolis, Md., on the land occupied by Fort Severn, which was given up by the War Department for the purpose. The course was fixed at five years, of which only the first and last were spent at the School, the intervening three being passed at sea. This arrangement was not strictly adhered to, the exigencies of the service making it necessary, in many cases, to shorten the period of study. In January, 1846, four months after the opening of the School, the students consisted of 36 Midshipmen, of the date of 1840, who were preparing for the examination for promotion; 13 of the date of 1841, who were to remain until drafted for service at sea; and 7 Acting Midshipmen, appointed since September of the previous year. The Midshipmen of the date of 1840 were the first to be graduated, finishing their limited course in July, 1846, and they were followed in order by the subsequent dates, until the reorganization of the School, in 1850.

In September, 1849, a Board was appointed to revise the plan and regulations of the Naval School. The Board was composed of the following officers:

Commander William B. Shubrick,
Commander Franklin Buchanan,
Commander Samuel F. Dupont,
Commander George P. Upshur,
Surgeon W. S. W. Ruschenberger,
Professor William Chauvenet,
Captain Henry Brewerton, U. S. A.

The plan reported by the Board was approved, and went into operation July 1, 1850.

The new organization provided for a course of seven years, the first two and the last two at the School and the three intermediate years at sea. The School was placed under the supervision of the Bureau of Ordnance and Hydrography, and its name was changed to the United States Naval Academy. The corps of professors was enlarged, the course was extended, and the system of separate departments, with executive heads, was fully adopted. It was provided that a Board of Visitors should make an annual inspection of the Academy, and report upon its condition to the Secretary of the Navy. A suitable vessel was attached to the Academy as a practice-ship, and the annual practice-cruises were begun.

After the system had been in operation a year new changes were proposed, and the recommendations of the Academic Board on the subject were referred to the Board of Examiners of the year 1851, composed of the following officers:

Commodore David Conner,
Captain Samuel L. Breese,
Commander C. K. Stribling,
Commander A. Bigelow,
Commander Franklin Buchanan,
Lieutenant Thomas T. Craven.

The change recommended by the Board of Examiners, and adopted by the Department, consisted mainly in leaving out the requirement of three years of sea-service in the middle of the course, thus making the four years of study consecutive. The practice-cruise supplied the place of the omitted sea-service, and gave better opportunities of training. The change went into operation in November, 1851, together with other improvements recommended by the Board. The system has been continued, with some slight modifications, to the present time. The first class to receive the benefit of it was that which entered in 1851. Six members of this class completed the course in three years, and were graduated in June, 1854; the rest of the class followed in 1855.

In May, 1861, on the outbreak of the war, the Academy was removed to Newport, R. I. The three upper classes were detached and ordered to sea, and the remaining Acting Midshipmen were quartered in the Atlantic House and on board the frigates *Constitution* and *Santee*. In September, 1865, the Academy was moved back to Annapolis, where it has since remained.

When the Bureau of Navigation was established, July 5, 1862, the Academy was placed under its supervision; March 1, 1867, it was placed under the direct care and supervision of the Navy Department, the administrative routine and financial management being still conducted through the Bureau. On the 11th of March, 1869, all official connection with the Bureau came to an end.

The term of the academic course was changed by law, March 3, 1873, from four to six years. The change took effect with the class which entered in the following summer.

In 1866 a class of Acting Third Assistant Engineers was ordered to the Academy for instruction. The course embraced the subjects of steam engineering, mechanism, chemistry, and mechanics, and practical exercises with the steam engine and in the machine-shop. This class was graduated in June, 1868, together with two Cadet-Engineers who had entered the Academy in 1867. After an interval of four years, in October, 1871, a new class of Cadet-Engineers was admitted. This class followed a two years' course, somewhat more extended than that of the class of 1868, and was graduated in 1873. In 1872 and in 1873 new classes were admitted, the first of which left the Academy in 1874 and the second in 1875. By an act of Congress, approved February 24, 1874, the course of instruction for Cadet-Engineers was made four years instead of two; and the new provision was first applied to the class entering the Academy in the year 1874. This class was graduated in June, 1878.

By an act of Congress, approved August 5, 1882, it was provided that from that date "there shall be no appointments of Cadet-Midshipmen or Cadet-Engineers at the Naval Academy, but in lieu thereof Naval Cadets shall be appointed from each Congressional district and at large, as now provided by law for Cadet-Midshipmen, and all the undergraduates at the Naval Academy shall thereafter be designated and called 'Naval Cadets;' and from those who successfully complete the six years' course appointments shall hereafter be made as it is necessary to fill vacancies in the lower grades of the Line and Engineer Corps of the Navy and of the Marine Corps: *And provided further*, That no greater number of appointments into these grades shall be made each year than shall equal the number of vacancies which has occurred in the same grades during the preceding year, such appointments to be made from the graduates of the year at the conclusion of their six years' course, in the order of merit, as determined by the Academic Board of the Naval Academy; the assignment to the various corps to be made by the Secretary of the Navy upon the recommendation of the Academic Board. But nothing herein contained shall reduce the number of appointments from such graduates below ten in each year, nor deprive of such appointment any graduate who may complete the six years' course during the year 1882. And if there be a surplus of graduates, those who do not receive such appointment shall be given a certificate of graduation, an honorable discharge, and one year's sea-pay, as now provided by law for Cadet-Midshipmen; and so much of section 1521 of the Revised Statutes as is inconsistent herewith is hereby repealed."

"That any Cadet whose position in his class entitles him to be retained in the service may, upon his own application, be honorably discharged at the end of four years' course at the Naval Academy, with a proper certificate of graduation."

SUPERINTENDENTS
OF THE
UNITED STATES NAVAL ACADEMY.

Assumed Command:

- Sept. 3, 1845.—Commander Franklin Buchanan.
Mar. 15, 1847.—Commander George P. Upshur.
July 1, 1850.—Commander Cornelius K. Stribling.
Nov. 1, 1853.—Commander Louis M. Goldsborough.
Sept. 15, 1857.—Captain George S. Blake.
Sept. 9, 1865.—Rear-Admiral David D. Porter.
Dec. 1, 1869.—Commodore John L. Worden.
Sept. 22, 1874.—Rear-Admiral C. R. P. Rodgers.
July 1, 1878.—Commodore Foxhall A. Parker.
Aug. 2, 1879.—Rear-Admiral George B. Balch.
June 13, 1881.—Rear-Admiral C. R. P. Rodgers.
Nov. 14, 1881.—Captain F. M. Ramsay.

BOARD OF VISITORS, JUNE, 1884.

REAR-ADMIRAL R. W. SHUFELDT, U. S. Navy, *President.*

HON. ROBERT C. SCHENCK, Washington, D. C., *Vice-President.*

Hon. GEORGE H. PENDLETON,	U. S. Senate.
Hon. ANGUS CAMERON,	U. S. Senate.
Hon. S. S. COX,	House of Representatives.
Hon. NATHAN GOFF, Jr.,	House of Representatives.
Hon. JOHN H. EVINS,	House of Representatives.
Hon. DORMAN B. EATON,	New York, N. Y.
Hon. STEPHEN M. ALLEN,	Boston, Mass.
Prof. EDWARD S. JOYNES,	Columbia, S. C.
Mr. ERWIN S. JEWETT,	Kansas.
Mr. WILLIAM H. UPHAM,	Wisconsin.

ACADEMIC CALENDAR.

1884-1885.

1884.

Oct. 1.—Beginning of first term Wednesday.

1885.

Jan. 26-31.—Semi-annual examination Monday-Saturday.

Jan. 31.—End of first term Saturday.

June 1-6.—Annual examination Monday-Saturday.

June 6.—End of academic year, 1884-85 Saturday.

May 15.—Examination of candidates for admission as Naval
Cadets Friday.

Sept. 1.—Examination of candidates for admission as Naval
Cadets Tuesday.

Oct. 1.—Beginning of first term, 1885-86 Thursday.

The academic months end on the following days :

1884-1885.

October	Nov. 1	February	Feb. 28
November	Nov. 29	March	Mar. 28
December	Dec. 27	April	Apr. 25
January	Jan. 24	May	May 23

1885-1886.

October	Oct. 31	December	Dec. 26
November	Nov. 28	January	Jan. 23

SEPTEMBER.							MARCH.						
Sun.	M.	T.	W.	T.	F.	Sat.	Sun.	M.	T.	W.	T.	F.	Sat.
	1	2	3	4	5	6	1	2	3	4	5	6	7
7	8	9	10	11	12	13	8	9	10	11	12	13	14
14	15	16	17	18	19	20	15	16	17	18	19	20	21
21	22	23	24	25	26	27	22	23	24	25	26	27	28
28	29	30	-----	-----	-----	-----	29	30	31	-----	-----	-----	-----
OCTOBER.							APRIL.						
			1	2	3	4			1	2	3	4	
5	6	7	8	9	10	11	5	6	7	8	9	10	11
12	13	14	15	16	17	18	12	13	14	15	16	17	18
19	20	21	22	23	24	25	19	20	21	22	23	24	25
26	27	28	29	30	31	-----	26	27	28	29	30	-----	-----
NOVEMBER.							MAY.						
						1						1	2
2	3	4	5	6	7	8	3	4	5	6	7	8	9
9	10	11	12	13	14	15	10	11	12	13	14	15	16
16	17	18	19	20	21	22	17	18	19	20	21	22	23
23	24	25	26	27	28	29	24	25	26	27	28	29	30
30	-----	-----	-----	-----	-----	-----	31	-----	-----	-----	-----	-----	-----
DECEMBER.							JUNE.						
	1	2	3	4	5	6		1	2	3	4	5	6
7	8	9	10	11	12	13	7	8	9	10	11	12	13
14	15	16	17	18	19	20	14	15	16	17	18	19	20
21	22	23	24	25	26	27	21	22	23	24	25	26	27
28	29	30	31	-----	-----	-----	28	29	30	-----	-----	-----	-----
JANUARY.							SEPTEMBER.						
				1	2	3			1	2	3	4	5
4	5	6	7	8	9	10	6	7	8	9	10	11	12
11	12	13	14	15	16	17	13	14	15	16	17	18	19
18	19	20	21	22	23	24	20	21	22	23	24	25	26
25	26	27	28	29	30	31	27	28	29	30	-----	-----	-----
FEBRUARY.							OCTOBER.						
1	2	3	4	5	6	7				1	2	3	
8	9	10	11	12	13	14	4	5	6	7	8	9	10
15	16	17	18	19	20	21	11	12	13	14	15	16	17
22	23	24	25	26	27	28	18	19	20	21	22	23	24
-----	-----	-----	-----	-----	-----	-----	25	26	27	28	29	30	31

OFFICERS
ATTACHED TO THE
UNITED STATES NAVAL ACADEMY.

SUPERINTENDENT,

CAPTAIN F. M. RAMSAY.

Assistant to the Superintendent, and in charge of Buildings and Grounds,

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COMMANDER N. H. FARQUHAR.

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LIEUTENANT T. PORTER,

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LIEUTENANT A. C. DILLINGHAM,

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LIEUTENANT C. D. GALLOWAY.

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MATTHEW STROHM.

ORDNANCE AND GUNNERY.

Head of Department,

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LIEUTENANT R. R. INGERSOLL,

LIEUTENANT J. H. BULL,

ENSIGN C. S. MCCLAIN.

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ANTOINE J. CORBESIER.

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GEORGE HEINTZ.

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LIEUTENANT W. J. BARNETTE,
LIEUTENANT R. G. PECK.

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Assistants,

PASSED ASSISTANT ENGINEER J. K. BARTON,
ASSISTANT ENGINEER W. M. PARKS,
ASSISTANT ENGINEER W. R. KING,
ASSISTANT ENGINEER G. H. T. BABBITT.

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Assistants,

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ENSIGN W. F. FULLAM,
PROFESSOR W. W. JOHNSON, A. M.

PHYSICS AND CHEMISTRY.

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LIEUTENANT F. H. HOLMES,
ENSIGN H. D. KNAPP,
PROFESSOR N. M. TERRY, A. M., PH. D.
PROFESSOR C. E. MUNROE, S. B.

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Head of Department,

PROFESSOR W. W. HENDRICKSON.

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LIEUTENANT H. O. RITTENHOUSE,
LIEUTENANT J. C. CRESAP,
LIEUTENANT A. C. HODGSON,
LIEUTENANT H. C. GEARING,
ENSIGN J. G. QUINBY.

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Assistants,

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 LIEUTENANT G. W. TYLER,
 LIEUTENANT E. B. BARRY,
 LIEUTENANT W. H. TURNER,
 LIEUTENANT C. R. MILES,
 ENSIGN A. E. CULVER,
 PROFESSOR W. W. FAY, A. M.

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 ASSISTANT PROFESSOR A. V. S. COURCELLE,
 ASSISTANT PROFESSOR E. DOVILLIERS,
 ASSISTANT PROFESSOR J. LEROUX,
 ASSISTANT PROFESSOR H. DALMON.

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Head of Department,

COMMANDER C. D. SIGSBEE.

Assistants,

LIEUTENANT W. P. CLASON,
 PROFESSOR M. OLIVER,
 ASSISTANT PROFESSOR C. F. BLAUVELT.

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OFFICERS NOT ATTACHED TO THE ACADEMIC STAFF.

LIEUTENANT C. T. HUTCHINS, *in charge of Ships.*
 SURGEON T. C. WALTON, M. D.
 PASSED ASSISTANT SURGEON B. F. ROGERS, M. D.
 PASSED ASSISTANT SURGEON G. E. H. HARMON, M. D.
 PASSED ASSISTANT SURGEON C. W. RUSH, M. D.
 PAYMASTER F. H. ARMS, *Pay Officer and Storekeeper.*
 PAYMASTER J. P. LOOMIS, *Commissary.*
 CHAPLAIN A. A. McALISTER.
 ASSISTANT PROFESSOR THOMAS KARNEY, A. M., *Librarian.*
 J. J. GRAFF, *Assistant Librarian.*
 R. M. CHASE, *Secretary.*

Attached to the Ships.

BOATSWAIN A. M. POMEROY.
 GUNNER ROBERT SOMMERS.
 CARPENTER G. W. CONOVER.

MATES.

*Attached to the Santee, the Dale, and the Phlox.*SAMUEL GEE,
JAMES HILL,
C. J. MURPHY,B. G. PERRY,
JOSEPH ROGERS,
ROBERT SILVER,

W. G. SMITH.

MARINE OFFICERS.

CAPTAIN McLANE TILTON, *Commanding Marines.*
FIRST LIEUTENANT S. H. GIBSON.

ACADEMIC BOARD.

THE SUPERINTENDENT.

THE COMMANDANT OF CADETS.

THE HEAD OF THE DEPARTMENT OF SEAMANSHIP, NAVAL TACTICS, AND NAVAL CONSTRUCTION.

THE HEAD OF THE DEPARTMENT OF ORDNANCE AND GUNNERY.

THE HEAD OF THE DEPARTMENT OF ASTRONOMY, NAVIGATION, AND SURVEYING.

THE HEAD OF THE DEPARTMENT OF STEAM ENGINEERING.

THE HEAD OF THE DEPARTMENT OF MECHANICS, AND APPLIED MATHEMATICS.

THE HEAD OF THE DEPARTMENT OF PHYSICS AND CHEMISTRY.

THE HEAD OF THE DEPARTMENT OF MATHEMATICS.

THE HEAD OF THE DEPARTMENT OF ENGLISH STUDIES, HISTORY, AND LAW.

THE HEAD OF THE DEPARTMENT OF MODERN LANGUAGES.

THE HEAD OF THE DEPARTMENT OF MECHANICAL DRAWING.

CADET OFFICERS.

CADET-LIEUTENANT-COMMANDER,

D. W. TAYLOR.

CADET-LIEUTENANTS,

W. MCKAY,
W. W. JOYNES,H. A. BISPHAM,
W. W. GILMER.

CADET-MASTERS,

J. G. TAWRESEY,
T. C. FENTON,G. R. SLOCUM,
R. L. RUSSELL.

CADET-ENSIGNS,

J. P. MCGUINNESS,
J. W. KITTRELL,A. C. DIEFFENBACH,
W. G. MILLER,

J. E. SHINDEL.

*Cadet-petty-officers of the first class,*A. RUST,
B. WRIGHT,
V. O. CHASE
G. W. KLINE,A. THOMPSON,
C. S. STANWORTH,
J. STRAUSS,
T. B. SLADE,G. R. EVANS,
C. M. McCORMICK,
E. W. EBERLE,
R. E. COONTZ.*Cadet-petty-officers of the second class,*W. H. G. BULLARD,
W. L. DODD
J. W. OMAN,
H. K. HINES,W. H. FOUST,
B. JACOBS,
W. H. CALDWELL,
S. M. STRITE,F. A. LEVIS,
G. F. COOPER,
G. B. REILLY,
C. C. BILLINGS.

SUMMER CRUISE, 1884.

OFFICERS AND NAVAL CADETS.

UNITED STATES PRACTICE-SHIP CONSTELLATION.

COMMANDER N. H. FARQUHAR, *Commanding.*
LIEUTENANT W. GOODWIN, *Executive Officer.*
LIEUTENANT J. F. MEIGS, *Navigator and Instructor in Navigation.*
LIEUTENANT E. H. GHEEN, *Watch Officer.*
LIEUTENANT E. B. BARRY, *Watch Officer.*
LIEUTENANT H. O. RITTENHOUSE, *Watch Officer.*
LIEUTENANT J. C. CRESAP, *Watch Officer.*
ENSIGN A. E. CULVER, *Assistant to Instructor in Navigation.*
PAYMASTER T. S. THOMPSON.
SURGEON J. C. WISE.
PASSED ASSISTANT SURGEON T. M. MURRAY.
CHAPLAIN A. A. MCALISTER.

NAVAL CADETS.

First Class.

Bootes, J. T.	McCormick, C. M.	Stanworth, C. S.
Chase, V. O.	McGuinness, J. P.	Strauss, J.
Corpening, C. M.	Miller, W. G.	Taylor, D. W.
Dashiell, J. M.	Russel, R. L.	Tennant, G. B.
Gilmer, W. W.	Rust, A.	Thompson, A.
Joynes, W. W.	Shindel, J. E.	Wright, B.
Kittrell, J. W.	Slade, T. B.	

Third Class.

Allen, H. A.	Davis, A. H.	Moale, E., jr.
Bachman, M. P.	Draper, H. L.	O'Neill, M. G.
Bertolette, L. C.	Edmonds, S. P.	Rodgers, H. C.
Blue, V.	Eyre, G. W.	Russell, F. M.
Bower, J. M.	Gueydan, H. L.	Scales, A. H.
Brown, F. H.	Hill, C. S.	Snow, E.
Bryan, H. F.	Hurlbut, S. R.	Stearns, B. W.
Burrage, G. H.	Jackson, R. H.	Stone, C. M.
Carnahan, J. S.	Johnston, C. E.	Swanstrom, F. E.
Childs, H. L.	La Tourrette, W. S.	Washington, T.
Cloke, W. S.	Long, A. T.	Wells, B. W.
Cohen, A. R. W.	McCully, N. A.	Wiley, H. A.
Coleman, R.	McMillan, W. G.	Wilmer, W. R.
Craig, C. C.	Martin, J. J.	

Fourth Class.

Anderson, L. J.	Frick, O. O'D.	Morris, J. R.
Baya, W. P.	Harris, J. V.	Mowbray, L.
Bassett, F. B., jr.	Hawke, E. E. S.	Murdough, F. O.
Beach, E. L.	Hayward, G. N.	Norton, A. L.
Behse, H. H.	Hicks, N. W.	Quinby, E. R.
Benham, H. K.	Hill, A. N.	Riley, J. F.
Beswick, D. W.	Hull, R. C.	Rowan, W. McD.
Brand, C. A.	Ingate, C. L. A.	Shaffer, P. C.
Brittain, C. B.	Kane, T. P.	Smith, R. M.
Campbell, A. P.	Kemp, H. G.	Smoak, M. F.
Carden, G. L.	Knoernschild, J. L.	Taylor, H., jr.
Carpenter, H. W.	Kochersperger, W. D.	Van Allen, J. McE.
Closé, H. B.	Koester, O. W.	Van Antwerp, W. C.
Croze, W. M.	Lejeune, J. A.	West, E. E.
Dye, V. B.	Melson, E. P.	Wilbur, C. D.
Franklin, W. B.	Monroe, M. D.	Williams, C. B.

UNITED STATES PRACTICE-SHIP DALE.

COMMANDER C. D. SIGSBEE, *Commanding.*
 LIEUTENANT A. ROSS, *Executive Officer.*
 LIEUTENANT F. M. WISE, *Navigator and Instructor in Navigation.*
 LIEUTENANT R. T. JASPER, *Watch Officer.*
 LIEUTENANT T. PORTER, *Watch Officer.*
 LIEUTENANT A. C. DILLINGHAM, *Watch Officer.*
 ENSIGN W. F. FULLAM, *Watch Officer.*
 ENSIGN H. S. KNAPP, *Assistant to Instructor in Navigation.*
 ASSISTANT PAYMASTER E. B. ROGERS.
 PASSED ASSISTANT SURGEON D. N. BERTOLETTE.

NAVAL CADETS.

First Class.

Bispham, H. A.	Fenton, T. C.	Pitner, S. E.
Burnstine, A.	Howell, R. B.	Poe, C. C.
Coontz, R. E.	Kline, G. W.	Slocum, G. R.
Dieffenbach, A. C.	Lombard, B. M.	Tarbox, G.
Dutton, A. H.	McKay, W.	Tawresey, J. G.
Eberle, E. W.	Nes, D. S.	Uberroth, P. H.
Evans, G. R.		

Third Class.

Allen, W. R.	Darby, S. E.	O'Halloran, T. M.
Ballinger, J. G.	Decker, B. C.	Peckham, H. L.
Blackwood, N. J.	Durell, E. H.	Pigott, M. R.
Boughter, F.	Eyre, W. P.	Ricketts, J. V.
Bristol, M. L.	Hibbs, F. W.	Salter, J. C.
Bruns, W. F.	Hudson, C. E.	Sims, J. W.
Burke, W. S.	Jewett, T. S.	Steber, B.
Callaghan, W. C.	Kalbach, L. A.	Stocker, R.
Cash, C. F.	Logan, G. W.	Straub, A. A.
Churchill, C.	McGee, H. W.	Ubsdell, J. A.
Cochran, C. S.	Marriott, J. J. C.	Waters, G.
Cole, E. K.	Moore, F. G.	Williams, W. H.
Craig, C. S.	Moseley, W. B.	Young, L. le S.

NAVAL CADETS ON BOARD THE UNITED STATES SHIP SANTEE, RETAINED AT THE ACADEMY FOR MACHINE SHOP AND OTHER PRACTICAL INSTRUCTION.

Second Class.

Andrews, P.	Foust, W. H.	McMillan, J. T.
Berry, J. G.	Griswold, J. N.	Oman, J. W.
Billings, C. C.	Hall, C. L.	Reilly, G. B.
Breed, G.	Hawk, G. F.	Rumsey, H. E.
Bullard, W. H. G.	Hines, H. K.	Stearns, J. W.
Caldwell, W. H.	Jacobs, B.	Strite, S. M.
Cooper, G. F.	Jenkins, F. W., jr.	Tisdale, R. D.
DeKrafft, J. C. P.	Johnson, E. V. D.	Winram, S. B.
Dodd, W. L.	Kress, F. N.	Witherspoon, E. T.
Edgar, W. A.	Levis, F. A.	Young, D. M.

SUMMARY.

On board United States Ship Constellation	109
On board United States Ship Dale	58
On board United States Ship Santee	30
Total	197

SYNOPSIS OF THE CRUISE.

CONSTELLATION.

Commissioned June 2. Cadets embarked June 9.

On June 16 sailed from Annapolis, beat down the bay, and went to sea June 25.

Arrived at Portsmouth, N. H., July 16.

Sailed from Portsmouth August 6, arrived in Chesapeake Bay August 12, and reached Annapolis August 28.

DALE.

Commissioned May 23. Cadets embarked June 9.

On June 16 sailed from Annapolis, beat down the bay, and went to sea June 26.

Arrived at Portsmouth, N. H., July 16.

Sailed from Portsmouth August 5, arrived in Chesapeake Bay August 12, and reached Annapolis August 28.

Order of general merit.	Name.	State.	Date of admission.
*1	Hewes, Charles Hinman	Pennsylvania	Oct. 1, 1880
*2	Knepper, Chester Mahlon	Pennsylvania	Oct. 1, 1880
*3	Capps, Washington Lee	Virginia	Oct. 1, 1880
*4	Hoggatt, Wilford Bacon	Indiana	June 11, 1880
*5	Williams, Clarence Stewart	Ohio	Sept. 22, 1880
6	Beecher, Albert Morrison	Iowa	June 11, 1880
7	Hill, Frank Kinsey	Ohio	Oct. 1, 1880
8	Curtis, Frederic Ellsworth†	Massachusetts	Sept. 22, 1880
9	Welles, Roger, jr.	Connecticut	Sept. 22, 1880
10	Moseley, Nathaniel Stockwell	California	Mar. 22, 1880
11	Field, Horace Almeron	New York	Oct. 1, 1880
12	McNulta, Herbert	Illinois	June 11, 1880
13	Hulme, Walter Oliphant	New Jersey	Oct. 1, 1880
14	McDonald, John Daniel	Nevada	Oct. 6, 1880
15	Parmenter, Henry Earl	Rhode Island	Oct. 1, 1880
16	Jones, Hilary Pollard	Virginia	Sept. 22, 1880
17	Terrell, Douglass Fuqua	Mississippi	Sept. 22, 1880
18	Hazeltine, Charles Walter	Missouri	June 11, 1880
19	Loomis, Frederick James	Connecticut	Oct. 1, 1880
20	Seymour, Isaac Knight	Maine	Sept. 22, 1880
21	Shoemaker, William Rawle	New Mexico	June 11, 1880
22	Plunkett, Charles Peshall	District of Columbia	Sept. 30, 1879
23	McCreary, Wirt	Pennsylvania	June 11, 1879
24	Fahs, Charles Marion	Alabama	Oct. 1, 1880
25	Werntz, Robert Lincoln	Pennsylvania	Oct. 1, 1880
26	Whittlesey, Humes Houston	Indiana	Oct. 1, 1880
27	McKean, Josiah Slutts	Ohio	Sept. 22, 1879
28	Hayes, Charles Harold	Pennsylvania	Sept. 22, 1880
29	Jones, Horace Walker	Virginia	Oct. 1, 1880
30	Macpherson, Victor	Kentucky	Sept. 22, 1880
31	Bush, William Wirt, jr.	New York	Sept. 22, 1880
32	Harrell, John Randolph†	Louisiana	Sept. 22, 1880
33	Crisp, Richard Owens†	Maryland	Oct. 1, 1880
34	Davis, Edward	Pennsylvania	Oct. 1, 1880
35	Johnston, William	Mississippi	June 11, 1880
36	Starr, John Barton	Kansas	Oct. 1, 1880
37	Smith, Sidney Fuller	Massachusetts	Sept. 22, 1880
38	O'Malley, William Ambrose	Pennsylvania	Sept. 22, 1880
39	Richardson, Thornton Russell	Pennsylvania	Oct. 1, 1880
40	Lawrence, William Hunter	Pennsylvania	Oct. 1, 1879
41	Mathews, Albert Clifton	Ohio	Oct. 1, 1880
42	Wirt, William Edgar	Ohio	Sept. 22, 1880
43	Orr, Robert Hunter	Delaware	Oct. 1, 1880

† Resigned.

CADETS.

43 members.

Age at date of admission.		Order of merit in—							Conduct.	Number of demerits.	Sea-service in practice-ships.		Order of general merit for four years.
Years.	Months.	Astronomy, navigation, and surveying.	Least squares and strength of materials.	Ordnance instructions, infantry tactics, gunnery.	Theory and practice of gunnery.	Heat.	Seamanship and naval tactics.	Practical instruction in steam.			Months.	Days.	
16	4	1	1	1	1	1	5	2	1	0	4	20	*1
18	9	4	3	3	2	2	14	1	11	5	4	20	*2
16	8	6	4	8	4	7	10	2	1	0	4	20	*3
14	9	2	7	2	3	3	3	6	1	0	8	17	*4
16	11	2	2	3	6	4	1	14	1	0	6	29	*5
17	4	5	6	14	9	6	10	17	36	23	8	17	6
19	6	10	13	10	8	8	14	14	31	17	4	23	7
17	8	14	16	32	12	20	35	44	18	8	6	29	8
17	9	7	5	7	10	13	17	36	13	7	6	29	9
18	0	19	14	9	5	16	2	24	25	13	8	17	10
19	3	7	9	6	15	9	23	19	24	10	4	23	11
17	6	21	23	19	13	17	16	19	11	5	8	17	12
20	10	18	24	28	18	15	18	8	1	0	4	20	13
16	11	9	19	13	10	18	12	45	13	7	6	29	14
19	6	20	25	21	16	29	28	4	13	7	4	23	15
16	10	14	12	5	19	11	13	26	39	28	5	29	16
17	3	12	22	16	28	5	20	13	7	3	6	29	17
17	2	13	18	21	29	14	7	23	18	8	8	17	18
18	0	16	10	21	34	27	28	6	28	14	4	20	19
17	6	31	35	37	14	12	5	38	1	0	6	29	20
17	4	22	40	27	39	22	4	19	25	13	8	17	21
15	7	24	32	20	41	28	18	38	42	30	9	9	22
17	1	27	32	15	44	37	24	32	22	9	6	29	23
17	9	28	11	26	36	22	36	26	39	28	4	23	24
19	4	33	29	18	20	16	43	18	8	4	4	20	25
19	1	16	44	40	24	34	38	42	18	8	4	20	26
15	3	32	37	41	32	32	9	32	32	18	9	9	27
16	8	29	32	28	39	39	21	41	28	14	6	29	28
19	1	43	30	34	22	35	33	16	30	16	4	23	29
15	3	23	26	31	23	25	21	32	38	26	6	29	30
15	8	11	14	25	16	20	24	42	46	51	6	29	31
16	7	30	27	11	26	22	31	31	45	47	6	29	32
18	9	38	20	35	30	33	42	10	25	13	4	23	33
20	8	39	39	43	37	41	36	11	34	19	4	23	34
17	10	40	40	38	37	37	27	28	13	7	8	17	35
19	2	36	28	33	24	29	40	28	41	29	4	20	36
16	11	33	21	36	45	19	39	37	13	7	6	29	37
17	4	35	42	44	35	46	26	19	8	4	6	29	38
20	1	40	30	30	31	44	34	30	36	23	3	7	39
20	11	42	45	42	43	40	31	9	32	18	9	18	40
18	10	37	46	24	32	43	45	32	43	32	4	23	41
17	9	45	36	45	42	42	40	46	35	20	6	29	42
20	0	46	38	46	45	44	46	40	44	40	4	20	43

Order of annual merit.	Name.	State.	Date of admission.
18	Bispham, Harrison Augustus	Pennsylvania	Oct. 1, 1881
34	Bootes, James Thomas	Delaware	Oct. 1, 1881
32	Burnstine, Albert	Michigan	Sept. 22, 1881
*6	Chase, Volney Ogle	Louisiana	Oct. 1, 1881
26	Coontz, Robert Edward	Missouri	Sept. 22, 1881
35	Corpening, Charles Macon	North Carolina	June 11, 1881
39	Dashiell, Julius Mathias	Maryland	Oct. 1, 1881
*4	Dieffenbach, Albert Christian	Pennsylvania	Oct. 1, 1881
36	Dutton, Arthur Henry	Indiana	Sept. 21, 1881
24	Eberle, Edward Walter	Arkansas	Sept. 22, 1881
22	Evans, George Robert	Massachusetts	Oct. 1, 1881
*5	Fenton, Theodore Cornell	Pennsylvania	Oct. 1, 1881
25	Gilmer, William Wirt	Virginia	June 11, 1880
37	Howell, Robert Beecher	Michigan	Sept. 21, 1881
14	Joynes, Walker Waller	Tennessee	Oct. 1, 1881
11	Kittrell, James Wesson	Mississippi	Sept. 23, 1881
8	Kline, George Washington	New Jersey	Oct. 1, 1881
20	Lombard, Benjamin Mathews	Iowa	Sept. 21, 1881
23	McCormick, Charles Monod	Virginia	Oct. 1, 1881
15	McGuinness, John Patrick	Idaho Territory	Sept. 21, 1881
*2	McKay, William	Pennsylvania	Oct. 1, 1881
7	Miller, William Gardne	Virginia	Oct. 1, 1881
19	Nes, David Small	Pennsylvania	June 13, 1881
33	Pitner, Samuel Ellis	Tennessee	Sept. 22, 1881
31	Poe, Charles Carroll	Pennsylvania	Sept. 21, 1881
21	Russell, Robert Lee	Georgia	June 14, 1881
16	Rust, Armistead	Virginia	Oct. 1, 1881
29	Shindel, James Elliott	Pennsylvania	June 13, 1881
17	Slade, Thomas Bog	Georgia	June 11, 1881
10	Slocum, George Ralph	Illinois	Sept. 22, 1881
12	Stanworth, Charles Semmes	Virginia	Oct. 1, 1881
13	Strauss, Joseph	Virginia	Oct. 1, 1881
30	Tarbox, Glennie	South Carolina	Sept. 22, 1881
*3	Tawresey, John Godwin	Delaware	Oct. 1, 1881
*1	Taylor, David Watson	Virginia	Oct. 1, 1881
27	Tennant, George Boyce	Michigan	Sept. 22, 1881
9	Thompson, Alexander	New York	Sept. 23, 1881
38	Uberroth, Preston Henry	Pennsylvania	Oct. 1, 1881
28	Wright, Benjamin	Tennessee	Sept. 21, 1881

CADETS.

39 members.

Age at date of admission.		Order of merit in—							Number of demerits.	Sea-service in practice-ship.		Order of annual merit.
Years.	Months.	Mechanical drawing.	International law.	Calculus and mechanics.	Sound, light, and heat.	Electricity and magnetism.	Steam machinery, marine engines, and boilers.	Conduct.		Months.	Days.	
16	8	13	9	26	18	21	18	4	10	4	24	18
17	10	34	35	40	24	36	29	35	100	4	24	34
17	0	24	29	25	26	30	32	34	97	3	22	32
20	2	15	3	7	4	5	6	27	63	4	24	*6
17	3	32	13	35	36	25	32	1	4	4	18	26
16	5	39	15	29	39	33	35	36	119	6	27	35
19	11	25	37	37	29	37	40	40	142	4	24	39
18	9	1	8	2	6	3	5	16	29	4	24	*4
17	1	28	34	31	38	30	39	32	94	4	18	36
17	0	30	17	26	25	16	32	21	37	4	18	24
18	7	12	24	17	12	27	21	26	60	4	24	22
18	8	9	14	4	5	8	4	5	11	4	24	*5
17	0	22	32	29	35	35	25	2	8	8	17	25
17	8	37	21	35	33	26	35	38	136	4	18	37
19	1	8	4	24	14	20	12	6	12	4	24	14
17	6	17	6	11	9	9	19	17	31	4	18	11
17	9	19	28	9	10	11	9	14	24	4	24	8
14	9	23	11	12	20	10	26	33	96	4	18	20
19	6	1	37	34	28	30	22	11	20	4	24	23
17	0	25	25	14	13	7	13	22	41	4	18	15
16	9	1	1	3	2	2	3	8	13	4	24	*2
16	9	14	18	6	11	6	7	29	71	4	24	7
15	11	6	32	20	21	15	17	23	47	6	27	19
17	3	30	40	37	34	40	29	12	23	4	18	33
17	9	33	31	22	37	28	37	25	56	4	18	31
16	7	27	7	19	16	23	24	3	9	6	27	21
19	3	18	22	17	18	23	8	9	16	4	24	16
17	8	38	20	31	39	22	29	24	48	6	27	29
17	11	10	26	16	22	34	14	20	36	6	27	17
17	0	16	11	10	8	14	15	17	31	4	18	10
17	2	39	16	8	17	12	16	31	89	4	24	12
19	10	1	27	15	15	18	11	19	32	4	24	1
17	7	19	29	23	26	19	26	39	138	4	18	30
19	8	1	5	5	3	4	2	6	12	4	24	*
17	7	7	2	1	1	1	1	10	18	4	24	*1
17	9	35	23	20	29	16	22	37	135	4	18	2
17	0	19	10	13	7	13	10	12	23	4	18	9
18	11	35	39	37	29	39	38	28	65	4	24	8
16	2	28	19	28	29	29	28	30	74	4	18	2

Order of annual merit.	Name.	State.	Date of admission.
14	Andrews, Philip	New Jersey	Sept. 28, 1882
24	Berry, John Giveen	Maine	June 17, 1882
25	Billings, Cornelius Canfield	Vermont	Sept. 28, 1882
7	Breed, George	Kentucky	June 17, 1882
3	Bullard, William Hannum Grubb	Pennsylvania	Sept. 28, 1882
11	Caldwell, William Howell	Tennessee	Sept. 28, 1882
17	Cooper, George Franklin	Georgia	June 17, 1882
19	DeKrafft, John Charles Philip	Iowa	Feb. 8, 1881
4	Dodd, Willard Louis	Indiana	Sept. 28, 1882
2	Edgar, Webster Appleton	New York	Sept. 22, 1881
8	Foust, William Harry	Ohio	Sept. 28, 1882
28	Griswold, John Noble	Wisconsin	Sept. 30, 1882
29	Hall, Clinton Lincoln	Massachusetts	Sept. 28, 1882
16	Hawk, George Frederick	Pennsylvania	June 17, 1882
6	Hines, Harold Kemble	Kentucky	Oct. 2, 1882
9	Jacobs, Benjamin	Kansas	June 11, 1881
18	Jenkins, Friend William	Pennsylvania	Sept. 28, 1882
23	Johnson, Edwin Van Dusen	Indiana	June 17, 1882
*1	Kress, Frederick Norton	New York	Oct. 3, 1882
15	Levis, Francis Adelbert	New York	June 17, 1882
27	McMillan, John Taylor	California	June 17, 1882
5	Oman, Joseph Wallace	Pennsylvania	June 17, 1882
21	Reilly, George Brinton	Wisconsin	Aug. 28, 1882
13	Rumsey, Harry Edgerton	Wyoming	Sept. 28, 1882
22	Stearns, John Warren	New Hampshire	Sept. 28, 1881
12	Strite, Samuel Melchoir	Maryland	Sept. 28, 1882
10	Tisdale, Ryland Dillard	Kentucky	Sept. 28, 1882
26	Winram, Samuel Black	Missouri	June 17, 1882
20	Witherspoon, Edward Taylor	Connecticut	Sept. 28, 1882
30	Young, David May	Virginia	Sept. 30, 1882

CADETS.

30 members.

Age at date of admission.		Order of merit in—						Number of demerits.	Sea-service in practice-ships.		Order of annual merit.
Years.	Months.	Trigonometry, analytical geometry, and descriptive geometry.	Chemistry.	English, history, and law.	French and Spanish.	Mechanical drawing.	Conduct.		Months.	Days.	
16	6	9	19	10	23	8	16	66	2	12	14
16	4	25	11	21	12	28	24	104	4	18	24
17	9	22	28	27	26	24	8	39	2	12	25
17	11	5	2	12	11	10	30	145	4	18	7
15	10	3	8	5	16	16	9	42	2	12	3
17	9	5	18	12	20	14	14	58	2	12	11
17	9	24	13	3	6	31	4	31	4	18	17
16	9	13	25	23	25	21	13	50	6	27	19
17	3	9	5	1	14	4	12	48	2	12	4
17	5	2	9	9	1	6	25	106	4	18	2
17	11	17	16	8	15	1	11	46	2	12	8
17	0	28	26	19	31	29	29	144	2	12	28
17	6	30	28	32	17	27	32	199	2	12	29
18	0	12	10	11	23	18	17	73	4	18	16
15	9	9	15	6	7	13	5	32	2	12	6
16	9	7	14	18	8	11	7	37	6	27	9
17	3	16	1	29	10	22	31	146	2	12	18
16	9	8	19	19	29	25	28	123	4	18	23
15	9	1	5	2	3	2	23	94	2	12	*1
17	2	20	16	17	22	2	1	9	4	18	15
15	3	18	22	31	28	29	27	112	4	18	27
17	10	15	4	7	12	9	2	12		18	5
17	11	21	28	16	19	18	6	33	2	12	21
16	7	13	5	14	26	5	22	90	2	12	13
15	3	29	27	26	3	15	26	109	4	18	22
16	4	4	11	23	18	23	9	42	2	12	12
16	8	19	3	14	2	18	15	64	2	12	10
17	8	23	23	28	30	16	20	82	4	12	26
17	10	26	21	4	9	26	19	81	2	12	20
16	6	27	32	22	5	32	17	73	2	12	30

Order of annual merit.	Name.	State.	Date of admission.
56	Allen, Henry Asa	Wisconsin	Sept. 4, 1883
58	Allen, Walter Raymond	New York	Sept. 6, 1883
45	Bachman, Morris Piper	Iowa	Sept. 4, 1883
68	Ballinger, James Grey	Kansas	Sept. 6, 1883
9	Bertolette, Levi Calvin	Delaware	Sept. 4, 1883
7	Blackwood, Norman Jerome	Pennsylvania	May 17, 1883
39	Blue, Victor	South Carolina	Sept. 6, 1883
62	Boughter, Francis	Pennsylvania	May 17, 1883
52	Bower, James McKesson	Illinois	Sept. 15, 1883
29	Bristol, Mark Lambert	New Jersey	May 19, 1883
37	Brown, Ford Hopkins	Iowa	May 17, 1883
55	Bruns, William Frederick	Kentucky	Oct. 3, 1883
*1	Bryan, Henry Francis	Ohio	May 2, 1883
32	Burke, Walter Safford	Illinois	May 17, 1883
78	Burrage, Guy Hamilton	Massachusetts	Sept. 6, 1883
73	Callaghan, William Charles	Ohio	May 17, 1883
74	Carnahan, John Sylvanus	Ohio	Sept. 27, 1883
47	Cash, Charles Frederick	Wisconsin	May 17, 1883
13	Childs, Herbert Leslie	Massachusetts	May 17, 1883
43	Churchill, Creighton	Missouri	Sept. 4, 1883
10	Cloke, William Snelling	New Jersey	May 17, 1883
59	Cochran, Claude Stanley	Ohio	Sept. 4, 1883
38	Cole, Eli Kelley	New York	Sept. 4, 1883
53	Coleman, Ross	California	May 17, 1883
57	Craig, Charles Curtis	Illinois	May 17, 1883
65	Craig, Colin Samuel	Iowa	May 17, 1883
14	Darby, Samuel Edgar	Arkansas	Sept. 28, 1882
27	Davis, Archibald Hiliard	North Carolina	May 17, 1883
15	Decker, Benton Clark	Illinois	May 17, 1883
41	Draper, Herbert Lemuel	Kansas	Sept. 6, 1883
11	Durell, Edward Hovey	Massachusetts	May 17, 1883
46	Edmonds, Samuel Preston	Missouri	May 19, 1883
67	Eyre, George Washington	Pennsylvania	Sept. 4, 1883
71	Eyre, William Preston	Pennsylvania	May 17, 1883
16	Gueydan, Henry Louis	Texas	Sept. 4, 1883
*2	Hibbs, Frank Warren	Minnesota	Sept. 4, 1883
40	Hill, Charles Sanderson	Arizona Territory	Sept. 6, 1883
80	Hudson, Charles Edward	Arkansas	Sept. 4, 1883
*5	Hurlbut, Samuel Ray	Connecticut	Sept. 4, 1883
49	Jackson, Richard Harrison	Alabama	June 4, 1883
72	Jewett, Thomas Scovell	Kansas	May 17, 1883

CADETS.

80 members.

Age at date of admission.		Order of merit in—					Sea-service in practice-ships.		Order of annual merit.
Years.	Months.	English and history.	Algebra and geometry.	French and Spanish.	Conduct.	Number of demerits.	Months.	Days.	
16	7	42	55	72	17	24	2	12	56
17	10	58	29	65	69	110	2	12	58
16	4	52	58	40	10	16	2	12	45
16	2	60	60	48	78	144	2	12	68
17	2	37	6	14	41	53	2	12	9
17	4	6	31	4	26	35	4	24	7
17	9	50	46	30	6	14	2	12	39
14	4	58	42	67	67	105	4	24	62
17	6	46	67	46	52	63	2	12	52
15	1	19	24	25	75	135	4	24	29
16	6	81	2	50	3	12	4	24	37
17	5	35	55	68	45	56	2	12	55
18	0	1	3	1	47	58	4	24	*1
16	4	30	14	54	6	14	4	24	32
16	2	78	42	85	9	15	2	12	78
14	8	78	69	64	81	159	4	24	73
17	9	81	79	80	63	97	2	12	74
16	10	55	45	45	58	76	4	24	47
15	4	3	40	14	50	62	4	24	13
17	0	52	63	23	41	53	2	12	43
17	3	22	14	9	62	94	4	24	10
17	10	64	34	77	23	31	2	12	59
16	0	24	21	65	39	51	2	12	38
15	10	39	47	70	37	46	3	25	53
16	11	50	48	59	49	61	4	24	57
17	1	62	60	60	52	63	4	24	65
15	8	44	16	5	56	71	4	24	14
16	8	13	34	26	33	41	4	9	27
15	4	17	9	40	17	24	4	24	15
16	8	9	63	60	27	36	2	12	41
17	3	11	27	14	33	41	4	24	11
15	9	63	20	52	50	62	4	24	46
17	11	71	39	78	48	59	2	12	67
15	10	65	72	60	71	114	4	24	71
15	8	56	8	1	77	141	2	12	16
15	10	13	7	7	30	39	2	12	*2
16	2	42	74	22	43	54	2	12	40
16	10	78	74	84	37	46	2	12	80
16	10	20	1	20	59	79	2	12	*5
17	0	44	77	43	19	25	4	24	49
16	9	66	70	79	72	116	4	24	72

Order of annual merit.	Name.	State.	Date of admission.
24	Johnston, Charles Ernest	Ohio	May 17, 1883
50	Kalbach, Lewis Alvin	Pennsylvania	Sept. 26, 1883
36	La Tourette, William Sherman	Ohio	Oct. 21, 1882
8	Logan, George Wood	Ohio	Sept. 3, 1883
24	Long, Andrew Theodore	North Carolina	May 17, 1883
*3	McCully, Newton Alexander, Jr.	South Carolina	May 19, 1883
28	McMillan, William Graham	North Carolina	Sept. 4, 1883
*4	Marriott, John Jordan Crittenden	At large	Sept. 26, 1883
51	Martin, John Joseph	New York	Sept. 4, 1883
6	Moale, Edward, jr.	Montana	June 17, 1882
76	Moore, Fred. Gordon	Kansas	May 17, 1883
42	Moseley, William Branch	Texas	Sept. 6, 1883
33	Murray, William Joseph	New York	June 17, 1882
44	O Halloran, Thomas Michael	Pennsylvania	May 17, 1883
61	O'Neill, Miles Gaylord	Indiana	Sept. 28, 1883
29	Peckham, Henry Lincoln	Rhode Island	May 17, 1883
26	Pigott, Michael Royston	Massachusetts	Sept. 20, 1883
66	Rodgers, Henry Croghan	At large	May 19, 1883
60	Ricketts, Joseph Vincent	Ohio	Sept. 6, 1883
69	Russell, Frank Mead	Pennsylvania	May 19, 1883
34	Salter, Jasper Colton	New York	Sept. 28, 1882
48	Scales, Archibald Henderson	North Carolina	May 19, 1883
63	Sims, James Whittle	Virginia	Sept. 4, 1883
23	Snow, Elliot	Utah Territory	Sept. 4, 1883
19	Steber, Benjamin	New York	May 17, 1883
12	Stearns, Ben Wade	Iowa	May 17, 1883
21	Stocker, Robert	Minnesota	Sept. 4, 1883
35	Stone, Clarence Morton	Indiana	Sept. 25, 1883
74	Straub, August Adolph	Pennsylvania	Sept. 6, 1883
54	Swanstrom, Frederick Emil	Minnesota	Sept. 6, 1883
31	Ubsdell, John Arnold	Missouri	Sept. 6, 1883
18	Washington, Thomas	North Carolina	May 17, 1883
17	Waters, Glen	Georgia	May 17, 1883
20	Wells, Benjamin Warner, jr.	Illinois	May 17, 1883
64	Welsh, Joseph John	Ohio	May 19, 1883
79	Wilmer, William Ringgold	Maryland	May 17, 1883
22	Williams, William Herschel	Alabama	May 17, 1883
70	Wiley, Henry Ariosto	Texas	May 17, 1883
77	Young, Louis le Sassier	Louisiana	Sept. 6, 1883

CADETS.

80 members.

Age at date of admission.		Order of merit in—					Sea-service in practice-ships.		Order of annual merit.
Years.	Months.	English and history.	Algebra and geometry.	French and Spanish.	Conduct.	Number of demerits.	Months.	Days.	
17	2	33	38	18	11	20	4	24	24
16	9	61	58	36	3	12	2	12	50
17	5	40	31	38	31	40	4	24	36
14	10	21	24	3	22	29	2	12	8
17	1	13	33	26	11	20	4	24	24
15	11	5	10	12	11	20	4	24	*3
17	6	24	30	28	1	3	2	12	28
16	6	8	3	13	64	102	2	12	*4
17	7	54	24	56	74	131	2	12	51
15	8	17	11	8	55	68	7	0	6
17	6	77	73	81	83	187	4	24	76
16	9	37	65	40	21	28	2	12	42
15	3	33	18	35	65	103	4	18	33
16	4	48	53	44	35	45	4	24	44
16	5	56	49	75	25	33	2	12	61
17	10	28	21	29	35	45	4	24	20
17	7	9	51	6	80	155	2	12	26
16	6	47	80	58	68	108	4	24	66
16	11	67	60	48	23	31	2	12	60
17	4	67	71	63	28	38	4	24	69
15	7	36	21	38	57	75	4	24	34
15	1	27	51	54	60	81	4	24	48
16	10	73	57	52	14	21	2	12	63
17	2	22	17	30	20	27	2	12	23
17	6	3	19	33	65	103	4	24	19
15	0	30	5	30	6	14	4	24	12
17	7	40	12	23	15	23	2	12	21
16	11	49	13	36	72	116	2	12	35
15	7	76	76	73	84	205	2	12	74
16	10	24	53	73	54	64	2	12	54
16	10	30	65	10	44	55	2	12	31
18	0	7	28	34	3	12	4	24	18
14	11	2	40	21	82	168	4	24	17
15	4	16	44	19	15	23	4	24	20
16	9	70	34	70	61	92	2	12	64
16	1	84	77	76	28	38	4	24	79
16	7	28	37	17	2	10	4	24	22
16	3	69	68	69	31	40	4	24	70
17	10	71	82	47	39	51	2	12	77

NAVAL CADETS.

Fourth Class—90 members.

Name.	State.	Date of admission.	Age at date of admission.		Sea-service in practice-ships.	
			Years.	Months.	Months.	Days.
Aiken, Samuel James	Tennessee	Sept. 4, 1884	17	7		
Alexander, James Nelson . . .	Missouri	Sept. 6, 1884	17	2		
Anderson, Louis Joseph . . .	Georgia	May 27, 1884	17	10	2	12
Bailey, Ralph	Arkansas	Sept. 5, 1884	16	11		
Bassett, Frederic Brewster, jr.	New York	May 19, 1884	15	4	2	12
Baya, William Peter	Florida	May 20, 1884	15	8	2	12
Beach, Edward Latimer . . .	Minnesota	May 20, 1884	16	10	2	12
Bebse, Herman Henry	New York	May 21, 1884	17	4	2	12
Beckwith, Henry	New York	Sept. 4, 1884	17	7		
Benham, Henry Kennedy . . .	New York	May 19, 1884	16	9	2	12
Beswick, Delworth Wilson . .	Michigan	May 20, 1884	15	8	2	12
Bischof, George Christian Wil- liam.	Nebraska	Sept. 5, 1884	17	10		
Brand, Charles Augustine . . .	Connecticut . . .	May 20, 1884	16	0	2	12
Brittain, Carlo Bonaparte . . .	Kentucky	May 19, 1884	17	4	2	12
Campbell, Archie Perrin . . .	Missouri	May 20, 1884	16	0	2	12
Carden, Godfrey Lynet	California	May 19, 1884	17	9	2	12
Carpenter, Henry Wilson . . .	At large	April 24, 1884	17	11	2	12
Chandler, Lloyd Horwitz . . .	New Hampshire . .	Sept. 4, 1884	15	0		
Clement, Edward Edmund . . .	Kentucky	Sept. 29, 1884	16	7		
Close, Hiram Benjamin	Texas	May 22, 1884	17	3	2	12
Coe, Robert	New York	Sept. 5, 1884	16	1		
Cramer, Stuart Warren	Illinois	Sept. 4, 1884	16	5		
Croze, William Michael	Indiana	May 19, 1884	17	3	2	12
Dye, Van Buren	Arkansas	May 19, 1884	16	11	2	12
Fairfax, Franklin Ernest . . .	New York	Sept. 6, 1884	17	10		
Fitch, Frederic	Colorado	Sept. 4, 1884	17	2		
Fitzgerald, George William . .	Illinois	Sept. 4, 1884	17	6		
Franklin, William Buell	Maryland	May 20, 1884	16	3	2	12
Frick, Oliver O'Donnell	Maryland	May 20, 1884	15	3	2	12
Gates, Herbert Grenville . . .	Michigan	Sept. 4, 1884	17	4		
Gillespie, William Thomas . . .	Virginia	Sept. 5, 1884	15	5		
Gould, William Henry	Ohio	Sept. 4, 1884	16	3		
Hagood, Robert William	Alabama	Sept. 6, 1884	17	7		
Hartrath, Armin	Michigan	Sept. 4, 1884	16	0		
Harris, Jephtha Vining	Florida	May 20, 1884	17	11	2	12
Hayward, George North	New York	May 19, 1884	17	11	2	12
Hicks, Nathan Woodhull	Minnesota	May 19, 1884	16	8	2	12
Hill, Alfred Newcomb	Illinois	May 20, 1884	17	5	2	12
Hubbard, John Flavel	New York	Sept. 5, 1884	17	2		
Hughes, Charles Frederick . . .	Maine	Sept. 6, 1884	17	10		
Hull, Robert Carter	At large	May 20, 1884	14	7	2	12
Howze, James Adrian	Mississippi	Sept. 6, 1884	17	3		
Ingate, Clarence Louis Adrian	Alabama	May 20, 1884	16	4	2	12
Jones, Roger ap Catesby	Alabama	Sept. 5, 1884	17	3		
Kane, Theodore Porter	New York	May 19, 1884	15	2	2	12
Kemp, Henry Greenway	Virginia	June 2, 1884	16	8	2	12
Kierulff, Thomas Crindell . . .	Iowa	Sept. 13, 1884	16	10		
Kinnear, Claude Hamilton . . .	Virginia	Sept. 26, 1884	16	3		
Knoernschild, Jacob Louis . . .	Wisconsin	May 20, 1884	15	5	2	12
Kochersperger, William Daniel	Pennsylvania . . .	May 20, 1884	15	9	2	12

NAVAL CADETS.

Fourth class—90 members—Continued.

Name.	State.	Date of admission.	Age at date of admission.		Sea-service in practice-ships.	
			Years.	Months.	Months.	Days.
Koester, Oscar William	Pennsylvania	April 5, 1884	17	10	2	12
Lafferty, John Lovett	California	Sept. 6, 1884	17	7		
Lange, Hermann Diedrick	New York	Sept. 5, 1884	17	7		
Lejeune, John Archer	Louisiana	May 19, 1884	17	4	2	12
Loyall, George	Virginia	Sept. 24, 1884	16	6		
Marble, Frank	New York	Sept. 4, 1884	17	0		
Melson, Edmund Preston	Missouri	May 20, 1884	17	7	2	12
Miller, Marcus Lyon	Massachusetts	Sept. 4, 1884	17	11		
Morgan, Casey Bruce	Mississippi	Sept. 4, 1884	16	10		
Monroe, Moses Daniel	New York	May 19, 1884	17	7	2	12
Morris, Joseph Ralston	Illinois	May 19, 1884	17	5	2	12
Mowbray, Louis	New York	May 21, 1884	17	2	2	12
Moses, Laurence Harry	Louisiana	Sept. 8, 1884	14	1		
Murdough, Frank Orin	Pennsylvania	May 20, 1884	16	5	2	12
Murphy, Ignatius Ingoldsby	New York	Sept. 8, 1884	17	4		
Norton, Albert Leland	Ohio	May 23, 1884	17	11	2	12
Quinby, Edwin Rufus	New York	May 22, 1884	14	9	2	12
Reid, James Henry	Virginia	Sept. 4, 1884	14	9		
Riley, James Franklin	Nebraska	April 24, 1884	17	11	2	12
Robertson, Ashley Herman	Illinois	Sept. 4, 1884	16	8		
Robison, Samuel Shelburn	Pennsylvania	Sept. 4, 1884	17	3		
Rowan, Willie McDaniel	West Virginia	May 19, 1884	17	8	2	12
Selfridge, George Shepley	At large	Sept. 5, 1884	15	11		
Scott, James Hutchison	At large	Oct. 1, 1884	17	7		
Shaffer, Paul Clarke	Ohio	May 20, 1884	15	5	2	12
Smith, Richard Montgomery	Wisconsin	April 4, 1884	17	10	2	12
Smith, Ernest Frederick	Illinois	Sept. 5, 1884	16	0		
Smoak, Marcus Frederic	South Carolina	May 19, 1884	17	4	2	12
Stafford, Leroy Augustus	Louisiana	Sept. 15, 1884	14	9		
Stickney, Herman Osman	Kentucky	Sept. 4, 1884	16	8		
Taylor, Henry, jr.	At large	May 27, 1884	16	2	2	12
Tutein, Constantine Diedrick	Massachusetts	Sept. 6, 1884	16	2		
Van Allen, John McEwen	New York	June 12, 1884	17	11	2	12
Van Antwerp, William Clarkson	Iowa	May 19, 1884	16	10	2	12
Vansant, William Newton	Pennsylvania	Sept. 4, 1884	15	6		
Wedderburn, John	Illinois	Sept. 5, 1884	16	0		
West, Ernest Edward	Georgia	May 23, 1884	16	10	2	12
Wilbur, Curtis Dwight	Dakota	May 19, 1884	17	5	2	12
Williams, Chester Bond	Iowa	May 23, 1884	17	10	2	12
Williams, George Washington	South Carolina	Sept. 6, 1884	15	7		

NUMERICAL SUMMARY.

October 15, 1884.

NAVAL CADETS.

First class	39 members.
Second class	30 members.
Third class	80 members.
Fourth class	90 members.
Total	239

RESIGNATIONS AND DISMISSALS.

January 2 to October 7, 1884.

RESIGNED.

Naval Cadet Henry E. Brucks	Jan. 2, 1884
Naval Cadet John E. Ethell	Jan. 17, 1884
Naval Cadet John L. Wethered	Jan. 17, 1884
Naval Cadet Alpheus L. Porter	Jan. 18, 1884
Naval Cadet Oliver O'D. Frick	Jan. 19, 1884
Naval Cadet Walter Canaday	Jan. 22, 1884
Naval Cadet William D. Kochersperger	Jan. 28, 1884
Naval Cadet James N. Alexander	Jan. 30, 1884
Naval Cadet Louis D. Ferriss	Feb. 2, 1884
Naval Cadet Harry L. Boyd	Feb. 4, 1884
Naval Cadet Richard T. Shipley	Feb. 4, 1884
Naval Cadet Delworth W. Beswick	Feb. 4, 1884
Naval Cadet William B. Bonham	Feb. 4, 1884
Naval Cadet Archie P. Campbell	Feb. 4, 1884
Naval Cadet Henry W. Carpenter	Feb. 4, 1884
Naval Cadet Henry H. Davis	Feb. 4, 1884
Naval Cadet Erle Edmundson	Feb. 4, 1884
Naval Cadet George W. Galloway	Feb. 4, 1884
Naval Cadet Robert C. Hull	Feb. 4, 1884
Naval Cadet Frank Kelly	Feb. 4, 1884
Naval Cadet Oscar W. Koester	Feb. 4, 1884
Naval Cadet Edward P. Morgan	Feb. 4, 1884
Naval Cadet William T. Peacock	Feb. 4, 1884
Naval Cadet Franklin Potter	Feb. 4, 1884
Naval Cadet William H. Seymour	Feb. 4, 1884
Naval Cadet Edwin M. Taliaferro	Feb. 4, 1884
Naval Cadet James Van de Wyngaard	Feb. 4, 1884
Naval Cadet Harry Friedlander	Feb. 5, 1884
Naval Cadet Godfrey L. Carden	Feb. 5, 1884
Naval Cadet Louis Mowbray	Feb. 5, 1884
Naval Cadet George E. Lynott	Feb. 28, 1884
Naval Cadet Valentine H. Muller	Mar. 20, 1884
Naval Cadet William C. Van Antwerp	Apr. 8, 1884
Naval Cadet Alfred N. Hill	Apr. 10, 1884
Naval Cadet Joseph A. Guthrie	Apr. 15, 1884
Naval Cadet William T. Gillespie	Apr. 17, 1884
Naval Cadet James L. Jacobs	May 2, 1884
Naval Cadet Charles K. Luzenberg	June 9, 1884
Naval Cadet Chester L. Caldwell	June 9, 1884
Naval Cadet Louis E. Warfield	June 10, 1884
Naval Cadet George W. Fitzgerald	June 11, 1884
Naval Cadet Frank D. Webster	June 13, 1884
Naval Cadet Charles T. Phillips	June 13, 1884
Naval Cadet Pierre O. Keilholtz	Aug. 6, 1884

Naval Cadet Henry K. McCay	Aug. 6, 1884
Naval Cadet John R. Harrell	Aug. 7, 1884
Naval Cadet R. O. Crisp	†Aug. 21, 1884
Naval Cadet Thomas H. Leary	Aug. 23, 1884
Naval Cadet Frederic E. Curtis	Aug. 24, 1884

DROPPED.

Naval Cadet Harry B. Mulford	Feb. 5, 1884
Naval Cadet William E. Tolin	Feb. 5, 1884
Naval Cadet Sam W. Irwin	Feb. 18, 1884
Naval Cadet Clarence H. Mathews	Mar. 25, 1884
Naval Cadet Willis B. Day	July 10, 1884
Naval Cadet William S. Hollis	July 10, 1884
Naval Cadet John C. Leonard	*Sept. 26, 1884
Naval Cadet Andrew McAllister	*Sept. 26, 1884
Naval Cadet Ledru R. Savage	Oct. 1, 1884
Naval Cadet Edward S. Hawke	Oct. 1, 1884
Naval Cadet Harry W. McGee	Oct. 4, 1884

DISMISSED.

Naval Cadet Leon H. Jastremski	Feb. 28, 1884
Naval Cadet John W. Maxcy	Feb. 28, 1884
Naval Cadet Frederic Parker	Feb. 28, 1884

DIED.

Naval Cadet Frederick S. Strang	Oct. 3, 1884
Naval Cadet Ambrose R. W. Cohen (at Augusta, Ga.)	Oct. 7, 1884

* To take effect December 31, 1884.

† To take effect November 18, 1884.

MERIT-ROLLS FOR 1883-84.

Merit-rolls, made out annually for each class, show the proficiency of the cadets in each branch of study. The numbers given in the table, page 58, showing the relative weight of the different branches, are used as coefficients; the final mark in each branch (on a scale of 4) being multiplied by the number assigned to that branch. The sum of the products, after adding multiple for conduct, is the final mark of the cadet for the year.

In the case of cadets who take an advanced course in any branch, the final mark in that branch is determined by adding to the final mark received in the required course one-fifth of the amount by which the final mark in the advanced course exceeds 2.50.

In the graduating merit-roll, the final mark for the course is determined by the sum of the yearly marks.

"Cadets who attain 85 per cent. of the multiple in any year shall be distinguished by a star affixed to their names on the merit-rolls."—(Regulations U. S. Naval Academy, § 150.)

The diplomas of cadets whose final marks on the graduating merit-roll are not less than 85 per cent. of the maximum, read "passed with distinction;" those whose final marks are between 74 per cent. and 85 per cent. of the maximum, read "passed with credit;" and those whose final marks are between $62\frac{1}{2}$ per cent. and 74 per cent., read "passed."

Cadets whose names are marked thus (†) were found deficient, but were allowed to continue in their classes on condition of passing at a re-examination.

Those marked (§) were found deficient, and recommended to be dropped.

Order of merit.	Name.	Seamanship and naval tactics.	Gunnery.	Steam engineering.	Navigation.	French or Spanish.	Cruise reports, journals, and testimonials.	Aggregate for examination.	General aggregate for four years.	Final aggregate.	Assignment.
		60	48	48	48	24	12	240	760	1000	
	Maxima		48	48	48	24	12	240	760	1000	
*1	Robert W. Gatewood	44.40	41.40	47.04	44.40	21.90	11.49	210.63	704.19	914.82	Honorably discharged. ^a
*2	Emil Theiss	40.50	38.88	42.00	38.76	23.70	9.45	193.29	710.73	904.02	Assistant engineer.
3	William H. P. Creighton	35.55	32.16	40.80	40.56	21.00	9.60	179.67	685.93	845.60	Assistant engineer.
4	Spencer S. Wood	46.80	44.76	30.72	46.80	17.40	11.40	197.88	644.54	842.42	Ensign (junior grade).
5	William B. Fletcher	53.25	44.28	34.68	45.36	17.40	11.04	206.01	627.19	833.20	Ensign (junior grade).
6	James H. Fitts	40.50	39.48	40.56	39.00	20.70	9.45	189.69	638.43	828.12	Assistant engineer.
7	Edison W. Sutphen	45.75	44.40	30.12	44.88	17.40	11.49	194.04	616.00	810.04	Ensign (junior grade).
8	William H. Chambers	39.15	33.96	30.84	30.96	15.30	9.84	160.05	641.76	801.81	Assistant engineer.
9	Jacob G. McWhorter	52.95	43.92	35.16	39.96	18.00	10.20	200.19	586.24	786.43	Second lieutenant, Marine Corps.
10	Marbury Johnston	44.40	40.56	33.24	43.56	19.50	8.55	189.81	594.25	784.06	Ensign (junior grade.)
11	Charles E. Rommel	30.00	34.92	36.00	35.16	17.70	7.20	160.98	613.21	774.19	Second lieutenant, Marine Corps. ^b
12	William B. Whittelsey	42.60	36.36	30.00	40.20	18.90	10.74	178.80	586.30	765.10	Ensign (junior grade).
13	Joseph L. Jayne	46.20	42.00	34.44	37.80	16.50	9.30	186.24	577.12	763.36	Ensign (junior grade).
14	Finley A. McNutt	47.40	32.76	30.12	44.16	19.50	8.25	182.19	576.59	758.78	Ensign (junior grade).
15	James G. Doyle	45.30	32.88	31.08	41.76	15.30	9.75	176.07	581.38	757.45	Ensign (junior grade).
16	Lorenzo Sample	49.05	36.36	30.00	42.96	20.10	10.20	188.67	562.07	750.74	Ensign (junior grade).
17	Ledru R. Savage	43.95	37.80	30.00	42.36	15.60		169.71	578.41	748.12	^c
18	Thomas C. Prince	45.75	27.48	32.04	41.76	18.60	10.20	175.83	570.79	746.62	Second lieutenant, Marine Corps.
19	John J. Blandin	35.25	35.88	30.36	42.00	20.40	9.99	173.88	566.27	740.15	Ensign (junior grade).
20	Albert L. Key	48.30	40.80	22.56	42.60	17.70	9.60	181.56	557.97	739.53	Ensign (junior grade).
21	Arthur H. Clarke	34.35	30.24	31.92	35.40	18.00	9.09	159.00	577.13	736.13	Second lieutenant, Marine Corps.

^a. At his own request.

^b. Transferred to Engineer Corps.

^c. Physically disqualified for the naval service.

MERIT-ROLL.

Order of merit.	Name.	Seamanship and naval tactics.	Gunnery.	Steam engineering.	Navigation.	French or Spanish.	Cruise reports, journals, and testimonials.	Aggregate for examination.	General aggregate for four years.	Final aggregate.	Assignment.
		60	48	48	48	24	12	240	760	1000	
22	Maxima										
23	William L. Howard	42.45	27.48	30.96	41.40	19.50	9.69	171.48	564.28	735.76	Ensign (junior grade).
24	Joseph H. Pendleton	32.55	30.84	34.92	32.76	19.50	9.90	160.47	572.77	733.24	Second lieutenant, Marine Corps.
25	Wiley R. M. Field	42.75	39.12	22.44	38.40	19.50	6.39	168.60	564.20	732.80	Ensign (junior grade).
26	Harold H. Eames	38.10	39.96	30.12	45.60	18.60	9.60	181.98	549.53	731.51	Ensign (junior grade).
27	Edwin A. Anderson	51.00	36.84	20.16	33.96	17.70	8.49	168.15	563.32	731.47	Ensign (junior grade).
28	John M. Poyer	49.05	28.32	30.00	45.96	15.30	9.90	179.13	551.36	730.49	Ensign (junior grade).
29	Walter T. Paine	38.85	34.20	30.00	42.96	18.60	8.64	173.25	556.68	729.93	Honorably discharged. ^a
30	William J. Grambs	44.25	30.36	30.84	42.00	16.80	10.65	174.90	553.49	728.39	Honorably discharged. ^a
31	Otto C. Gsanthner	25.20	23.88	43.56	15.56	16.50	8.64	134.34	585.86	720.20	Honorably discharged. ^a
32	Harry L. Hawthorne	25.05	39.96	36.60	24.00	16.20	7.14	149.55	568.01	717.56	Honorably discharged. ^a
33	Philo N. McGiffin	47.10	35.28	30.12	35.40	16.80	9.75	174.45	538.36	712.81	Honorably discharged. ^a
34	Clarence C. Willis	29.70	28.20	30.00	30.36	17.10	8.64	144.00	563.25	707.25	Honorably discharged. ^a
35	Frank H. Conant	31.50	26.16	31.20	30.00	16.50	10.59	145.95	560.87	706.82	Honorably discharged. ^a
36	Harry G. Leopold	17.70	32.52	37.68	27.96	15.00	8.55	139.41	559.80	699.21	Honorably discharged. ^a
37	Felton Parker	44.25	30.84	24.96	40.80	20.70	9.69	171.24	521.24	692.48	Honorably discharged. ^a
38	Lawrence S. Gwyn	39.30	24.12	30.96	41.40	18.30	9.45	163.53	527.89	691.42	Honorably discharged. ^a
39	John C. Leonard	37.80	28.20	16.32	30.00	16.20	9.75	138.27	552.86	691.13	^b .
40	Charles H. Howland	25.20	31.32	31.44	24.60	19.20	8.85	140.61	549.54	690.15	Honorably discharged. ^a
41	Ward P. Winchell	30.00	30.00	36.36	34.20	16.20	6.00	152.76	536.55	689.31	Honorably discharged. ^a
42	Robert B. Higgins	16.20	20.64	39.96	25.20	15.60	5.25	122.85	558.65	681.50	Honorably discharged. ^a
43	George E. Kent	42.45	31.56	30.00	40.80	18.00	10.59	173.40	506.38	679.78	Honorably discharged. ^a
44	Samuel A. W. Patterson	45.60	32.04	23.40	31.80	15.00	9.99	157.63	515.80	673.63	Honorably discharged. ^a

		45. 15	24. 48	24. 96	36. 00	18. 30	5. 40	154. 29	518. 07	672. 36	Honorably discharged. <i>a</i>
44	Frederick H. Stahle										
45	Andrew McAllister	19. 50	16. 80	30. 84	31. 20	15. 60	10. 29	124. 23	514. 58	638. 81	<i>b.</i>
§	Willis B. Day	11. 55	18. 24	30. 36	13. 56	15. 30	3. 75	92. 76	555. 50	648. 26	
	Lewis Nixon <i>c</i>	Absent.									

a. An act of Congress dated August 5, 1882, requires that all surplus cadets shall be honorably discharged from the naval service.

b. Physically disqualified for the naval service.

c. Appointed assistant naval constructor.

Merit-roll of the naval cadets of the first class (46 members), at the annual examination, June, 1884.

Order of merit for four years.	Name.	Astronomy, navigation, and surveying.	Least squares and strength of materials.	Ordnance instruction, infantry tactics, and gunnery.	Theory and practice of gunnery.	Heat.	Seamanship and naval tactics.	Practical instruction in steam-engineering.	Conduct.	Aggregate for fourth year.	Aggregate for third year.	Aggregate for second year.	Aggregate for first year.	General aggregate for four years.
		80	20	32	48	12	84	8	20	304	228	152	76	760
*1	Maxima													
*1	Charles H. Hewes ^a	76.00	19.50	31.04	46.68	11.31	76.02	7.40	20.00	2287.95	214.18	133.40	62.92	698.45
*2	Chester M. Knepper ^a	74.40	19.20	29.20	45.48	11.01	72.45	7.46	19.33	2278.53	207.18	130.92	65.38	682.01
*3	Washington L. Capps ^a	69.00	18.80	28.08	41.64	10.23	74.13	7.40	20.00	2269.28	200.83	141.29	69.56	680.96
*4	Wilford B. Hoggatt ^a	74.80	18.30	29.28	44.04	10.92	76.65	7.14	20.00	2281.13	199.02	129.11	58.85	668.11
*5	Clarence S. Williams ^a	74.80	19.35	29.20	40.56	10.77	77.49	6.80	20.00	2278.97	196.48	125.28	62.05	662.78
6	Albert M. Beecher ^b	71.00	18.45	26.96	38.28	10.32	74.13	6.76	16.93	2262.83	191.11	122.54	62.68	639.16
7	Frank K. Hill ^b	66.00	16.10	27.68	39.96	9.84	72.45	6.80	17.73	2256.56	197.64	123.45	60.90	638.55
8	Frederic E. Curtis ^{b,d}	64.40	15.85	24.88	37.68	9.09	64.26	6.00	18.93	241.09	198.13	132.43	65.69	637.34
9	Roger Welles, jr ^b	68.60	18.55	28.56	37.80	9.48	71.61	6.34	19.07	2260.01	190.10	121.89	61.94	633.94
10	Nathaniel S. Moseley ^b	63.20	16.00	27.84	41.40	9.75	77.28	6.62	18.27	2260.36	183.78	121.44	65.03	630.61
11	Horace A. Field ^b	68.60	17.15	28.64	36.60	9.81	70.14	6.66	18.67	2256.27	191.27	121.54	58.59	627.67
12	Herbert McNulta ^b	62.80	14.75	26.24	37.56	9.24	71.82	7.19	19.33	248.40	185.34	120.63	62.99	617.36
13	Walter O. Hulme ^b	63.60	14.55	25.28	35.88	9.39	71.19	7.06	20.00	246.95	178.62	124.97	64.46	615.00
14	Thomas H. Leary ^{b,d}	60.60	17.30	26.40	40.32	9.00	74.55	6.62	19.47	2254.26	178.15	119.63	58.94	610.98
15	John D. McDonald ^b	67.60	15.25	27.12	37.80	9.21	73.71	5.94	19.07	2255.70	178.62	116.99	56.41	607.72
16	Henry E. Parmenter ^b	63.00	14.35	25.92	36.36	8.61	68.46	7.36	19.07	243.13	179.28	121.21	63.09	606.71
17	Hilary P. Jones ^b	64.40	16.30	28.80	35.76	9.69	73.29	6.60	16.27	2251.11	177.23	114.98	59.54	602.86
18	Douglas F. Terrell ^b	65.20	14.85	26.72	34.08	10.35	70.98	6.82	19.60	248.60	180.54	114.91	57.96	602.01
19	Charles W. Hazeltine ^b	65.00	15.60	25.92	33.96	9.42	74.97	6.64	18.93	250.44	175.83	115.21	54.86	596.34
20	Frederick J. Loomis ^b	64.20	16.75	25.92	33.12	8.85	68.46	7.14	18.13	242.57	176.11	113.24	61.20	593.12
21	Henry K. McCay ^{b,d}	61.20	15.70	27.28	35.52	8.61	67.62	6.86	18.80	241.59	176.08	116.51	57.91	592.09

22	Isaac K. Seymour ^b	58.80	13.65	24.24	37.32	9.51	76.02	6.26	20.00	245.80	172.35	114.97	58.46	591.58
23	William R. Shoemaker ^b	62.60	13.05	25.44	32.40	9.03	76.23	6.66	18.27	243.68	172.71	114.51	59.51	590.41
24	Charles P. Plunkett ^b	61.60	13.85	26.00	32.28	8.67	71.19	6.26	16.00	235.85	166.25	111.84	63.99	577.93
25	Wirt McCreary ^b	60.20	13.85	26.88	31.08	8.28	69.72	6.40	18.80	235.21	165.13	115.62	58.05	574.01
26	Charles M. Fahs ^b	60.00	16.55	25.52	32.88	9.03	63.42	6.60	16.27	230.27	164.77	117.69	60.05	572.78
27	Robert L. Wernitz ^b	57.00	13.95	26.32	35.64	9.27	57.75	6.74	19.47	226.14	165.97	119.65	58.52	570.28
28	Humes H. Whittlesey ^b	64.20	12.60	23.52	34.44	8.37	63.21	6.06	18.93	231.33	162.26	114.76	58.95	567.30
29	Josiah S. McKean ^b	57.80	13.85	23.44	33.36	8.55	74.34	6.40	17.60	234.84	160.71	107.28	62.92	565.75
30	Charles H. Hayes ^b	59.60	13.85	25.28	32.40	8.10	70.77	6.20	18.13	234.33	161.77	111.58	57.21	564.89
31	Horace W. Jones	52.80	13.90	24.64	34.68	8.31	65.31	6.78	17.87	224.29	168.33	112.65	57.10	562.37
32	Victor Macpherson	62.00	14.20	25.12	34.56	9.00	70.77	6.40	16.33	238.58	162.41	104.61	53.42	559.02
33	William W. Bush, jr.	65.40	16.00	25.60	36.36	9.09	69.72	6.06	13.20	241.43	157.20	109.46	49.12	557.21
34	John R. Harrell ^a	59.20	14.15	27.36	34.20	9.03	66.36	6.52	13.73	230.55	159.54	111.55	55.31	556.95
35	Richard O. Crisp ^a	54.20	15.05	24.56	33.72	8.43	58.59	6.92	18.27	219.74	165.66	111.08	60.03	556.51
36	Edward Davis	54.00	13.10	23.20	32.76	8.01	63.42	6.90	17.47	218.86	157.65	114.40	58.46	549.37
37	William Johnston	53.60	13.05	24.08	32.76	8.28	68.88	6.58	19.07	226.30	158.98	107.25	56.09	545.62
38	John B. Starr	55.80	14.00	24.72	34.44	8.61	58.80	6.58	16.13	219.08	159.95	110.02	54.05	543.10
39	Sidney F. Smith	57.00	14.95	24.48	30.00	9.12	60.06	6.30	19.07	220.98	156.89	106.98	56.48	541.33
40	William A. O'Malley	56.00	13.00	22.00	33.00	7.08	69.09	6.66	19.47	226.30	151.86	103.80	54.39	536.35
41	Pierre O. Keilholtz ^a	52.60	12.80	23.68	34.20	8.31	57.33	7.34	18.92	215.19	159.63	104.85	55.19	534.86
42	Thornton R. Richardson	53.60	13.90	25.20	33.48	7.80	64.47	6.56	16.93	221.94	157.83	102.37	50.68	532.82
43	William H. Lawrence	53.40	12.50	23.36	31.44	8.04	66.36	6.94	17.60	219.64	158.23	102.12	50.96	530.95
44	Albert C. Mathews	54.40	12.00	25.68	33.36	7.89	56.28	6.40	15.73	211.74	159.36	104.85	54.64	530.59
45	William E. Wirt	51.40	13.45	21.20	31.80	7.95	58.80	5.60	17.33	207.53	144.56	101.18	52.90	506.17
46	Robert H. Orr	51.20	13.20	20.80	30.00	7.80	55.44	6.24	14.67	199.35	146.51	103.04	49.10	498.00

^a Completed four years' course "with distinction."^b Completed four years' course "with credit."^c Received 85 per cent. of multiple for the first-class year.^d Resigned after receiving a certificate that he had completed the four years' course.

Merit-roll of naval cadets of the second-class (40 members), at the annual examination June, 1884.

Order of annual merit.	Name.	Mechanical drawing.	International law.	Calculus and mechanics.	Sound, light, and heat.	Electricity and magnetism.	Steam machinery, marine engines, and boilers.	Conduct.	Aggregate.
	Maxima. . . .	16	16	56	28	28	72	12	228
*1	David W. Taylor . . .	14. 16	14. 96	59. 92	26. 39	26. 67	69. 12	10. 92	222. 14
*2	William McKay . . .	14. 40	15. 40	54. 74	25. 48	26. 18	66. 78	11. 22	214. 20
*3	John G. Tawresey . . .	14. 40	14. 52	51. 38	25. 27	24. 99	67. 86	11. 28	209. 70
*4	Albert C. Dieffenbach . .	14. 40	13. 84	55. 58	24. 57	25. 13	65. 88	10. 26	209. 66
*5	Theodore C. Fenton . . .	13. 52	13. 00	51. 94	24. 64	23. 52	66. 60	11. 34	204. 56
*6	Volney O. Chase . . .	11. 60	14. 92	51. 10	24. 92	24. 36	65. 70	8. 22	200. 82
7	William G. Miller . . .	11. 92	12. 52	51. 24	22. 75	24. 01	62. 64	7. 74	192. 82
8	George W. Kline . . .	11. 24	11. 56	47. 04	23. 31	22. 82	60. 66	10. 56	187. 19
9	Alexander Thompson . .	11. 24	13. 40	43. 12	23. 59	22. 47	60. 48	10. 62	184. 92
10	George R. Slocum . . .	11. 52	13. 32	45. 92	23. 52	22. 12	57. 06	10. 14	183. 60
11	James W. Kittrell . . .	11. 40	14. 16	45. 08	23. 38	23. 17	54. 72	10. 14	182. 05
12	Charles S. Stanworth . .	10. 20	12. 76	50. 40	20. 37	22. 61	56. 16	6. 66	179. 16
13	Joseph Strauss . . .	14. 40	11. 60	40. 88	21. 63	20. 37	58. 68	10. 08	177. 64
14	Walker W. Joynes . . .	13. 80	14. 76	37. 38	21. 77	20. 23	58. 32	11. 28	177. 54
15	John P. McGuinness . .	10. 92	11. 72	41. 02	22. 47	23. 59	57. 78	9. 54	177. 04
16	Armistead Rust . . .	11. 32	11. 88	39. 34	20. 30	19. 81	61. 38	11. 04	175. 07
17	Thomas B. Slade . . .	13. 48	11. 68	39. 76	19. 81	18. 55	57. 60	9. 84	170. 72
18	Harrison A. Bispham . .	12. 00	13. 60	37. 10	20. 30	20. 02	54. 90	11. 40	169. 32
19	David S. Nes . . .	14. 20	11. 20	37. 94	19. 88	20. 58	55. 93	9. 18	168. 96
20	Benjamin M. Lombard . .	11. 16	13. 32	44. 38	20. 09	22. 96	49. 50	6. 24	167. 65
21	Robert L. Russell . . .	10. 88	13. 92	39. 20	21. 00	19. 81	51. 12	11. 46	167. 39
22	George K. Evans . . .	12. 12	11. 76	39. 34	22. 54	19. 32	52. 02	8. 40	165. 50
23	Louis E. Warfield <i>a</i> . .	12. 32	10. 92	35. 84	19. 81	17. 50	54. 18	10. 44	161. 01
24	Charles M. McCormick . .	14. 40	10. 80	35. 56	18. 83	18. 76	51. 84	10. 80	160. 99
25	Edward W. Eberle . . .	10. 80	12. 64	37. 10	19. 67	20. 44	47. 70	9. 78	158. 13
26	William W. Gilmer . . .	11. 20	11. 20	36. 40	18. 34	18. 48	50. 94	11. 52	158. 08
27	Robert E. Coontz . . .	10. 76	13. 12	35. 42	18. 13	19. 67	47. 70	11. 76	156. 56
28	George B. Tennant . . .	10. 48	11. 80	37. 94	18. 69	20. 44	51. 84	3. 90	155. 09
29	Benjamin Wright . . .	10. 84	12. 36	36. 96	18. 69	19. 04	49. 14	7. 56	154. 59
30	James E. Shindel . . .	10. 40	12. 12	36. 26	17. 78	19. 88	48. 24	9. 12	153. 80
31	Glennie Tarbox . . .	11. 24	11. 40	37. 52	19. 04	20. 30	49. 50	3. 72	152. 72
32	Charles C. Poe . . .	10. 68	11. 24	37. 66	17. 99	19. 25	47. 16	8. 64	152. 62
33	Albert Burnstine . . .	11. 04	11. 40	37. 24	19. 04	18. 76	47. 70	6. 18	151. 36
34	Charles M. Corpening . .	10. 20	12. 92	36. 40	17. 78	18. 62	47. 34	4. 86	148. 12
35	Arthur H. Dutton . . .	10. 84	11. 12	36. 26	17. 92	18. 76	46. 80	6. 36	148. 06
36	Robert B. Howell . . .	10. 44	11. 96	35. 42	18. 48	19. 39	47. 34	3. 84	146. 87
37	Julius M. Dashiell . . .	10. 92	10. 80	35. 00	18. 69	17. 50	46. 62	3. 48	143. 01
†	Samuel E. Pitner . . .	10. 80	10. 16	35. 00	18. 41	15. 54	48. 24	10. 62	148. 77
†	James T. Bootes . . .	10. 60	11. 00	34. 30	19. 74	18. 34	48. 24	6. 00	148. 22
†	Preston H. Uberroth . .	10. 48	10. 36	35. 00	18. 69	17. 15	46. 98	8. 10	146. 76

a Resigned.

Merit-roll of naval cadets of the third class (32 members), at the annual examination, June, 1884.

Order of annual merit.	Name.	Trigonometry, analytical geometry, and descriptive geometry.	Chemistry.	English, history, and law.	French and Spanish.	Mechanical drawing.	Conduct.	Aggregate.
	Maxima	48	24	24	24	24	8	152
*1	Frederick N. Kress	45.36	18.30	21.00	21.18	20.58	4.99	131.41
2	Webster A. Edgar	41.76	17.70	19.56	23.82	19.86	4.61	127.31
3	William H. G. Bullard	40.68	18.12	20.22	17.52	18.12	6.66	121.32
4	Willard L. Dodd	36.72	18.30	21.36	17.82	20.22	6.46	120.88
5	Joseph W. Oman	36.00	18.54	19.98	18.12	19.20	7.62	119.46
6	Harold K. Hines	36.72	16.92	20.16	19.08	18.66	6.98	118.52
7	George Breed	39.36	18.96	18.36	18.18	19.08	3.36	117.30
8	William H. Foust	35.52	16.86	19.74	17.64	20.76	6.53	117.05
9	Benjamin Jacobs	37.44	17.16	17.58	18.78	18.84	6.82	116.62
10	Ryland D. Tisdale	33.72	18.84	18.30	21.30	17.82	5.95	115.93
11	William H. Caldwell	39.36	16.62	18.36	16.50	18.60	6.14	115.58
12	Samuel M. Stride	39.72	17.34	17.22	16.98	17.40	6.66	115.32
13	Harry E. Rumsey	36.24	18.30	18.30	15.90	19.92	5.12	113.78
14	Philip Andrews	36.72	15.96	18.96	16.14	19.38	5.89	113.05
15	Francis A. Levis	33.36	16.86	18.00	16.38	20.58	7.71	112.89
16	George F. Hawk	36.36	17.64	18.90	16.14	17.82	5.66	112.52
17	George F. Cooper	32.40	17.28	20.40	19.14	15.60	7.01	111.83
18	Friend W. Jenkins	35.76	19.44	15.84	18.42	17.58	3.33	110.37
19	John C. P. DeKrafft	36.24	15.48	17.22	16.08	17.76	6.40	109.18
20	Edward T. Witherspoon	31.68	15.90	20.34	18.66	16.44	5.41	108.43
21	George B. Reilly	33.12	15.00	18.24	16.80	17.82	6.94	107.92
22	John W. Stearns	30.84	15.24	16.62	21.18	18.42	4.51	106.81
23	Edwin Van D. Johnson	37.20	15.96	17.40	15.30	16.56	4.06	106.48
24	John G. Berry	32.28	17.34	17.34	18.12	16.08	4.67	105.83
25	Cornelius C. Billings	32.88	15.00	16.38	15.90	16.92	6.75	103.83
26	Samuel B. Winram	32.52	15.66	16.08	15.12	18.12	5.38	102.88
27	John T. McMillan	35.04	15.72	15.48	15.42	15.84	4.42	101.92
28	John W. Griswold	30.96	15.30	17.40	15.06	15.84	3.39	97.95
29	Clinton L. Hall	30.00	15.00	15.06	17.10	16.26	1.63	95.05
†	David M. Young	31.44	14.46	17.28	19.68	15.24	5.66	103.76
§	Chester L. Caldwell	28.44	14.58	17.10	16.50	19.80	7.17	103.59
§	Frank D. Webster	29.64	15.54	15.66	15.06	18.84	5.34	100.08

Merit-roll of naval cadets of the fourth class (85 members), at the annual examination, June, 1884.

Order of annual merit.	Name.	English and his- tory.	Algebra and ge- ometry.	French and Spanish.	Conduct.	Aggregate.
	Maxima	24	24	24	4	76
*1	Henry F. Bryan	22.14	21.48	22.80	3.23	69.65
*2	Frank W. Hibbs	19.92	21.06	21.72	3.48	66.18
*3	Newton A. McCully	20.94	19.86	21.12	3.73	65.65
*4	John J. C. Marriott	20.40	21.48	21.00	2.64	65.52
*5	Samuel R. Hurlbut	19.50	22.08	20.58	2.95	65.11
6	Edward Moale	19.80	19.80	21.66	3.09	64.35
7	Norman J. Blackwood	20.82	17.88	21.96	3.53	64.19
8	George W. Logan	19.44	18.42	22.56	3.61	64.03
9	Levi C. Bertollette	18.48	21.24	20.94	3.29	63.95
10	William S. Cloke	19.14	19.50	21.60	2.75	62.99
11	Edward H. Durell	20.22	18.36	20.94	3.45	62.97
12	Ben W. Stearns	18.90	21.30	18.84	3.81	62.85
13	Herbert L. Childs	21.06	17.22	20.94	3.17	62.39
14	Samuel E. Darby	18.06	19.20	21.90	3.05	62.21
15	Benton C. Decker	19.80	19.92	18.42	3.68	61.82
16	Henry L. Gueydan	16.86	19.98	22.80	2.12	61.76
17	Glen Waters	22.08	17.22	20.52	1.76	61.58
18	Thomas Washington	20.58	18.30	18.72	3.84	61.44
19	Benjamin Steber	21.06	18.90	18.78	2.63	61.37
20	Benjamin W. Wells, jr	19.86	17.10	20.64	3.69	61.29
21	Robert Stocker	18.18	19.68	19.68	3.69	61.23
22	William H. Williams	18.96	17.52	20.76	3.87	61.11
23	Elliot Snow	19.14	19.14	18.84	3.64	60.76
24	Charles E. Johnston	18.84	17.40	20.70	3.73	60.67
24	Andrew T. Long	19.92	17.70	19.32	3.73	60.67
26	Michael R. Pigott	20.34	16.44	21.84	1.93	60.55
27	Archibald H. Davis	19.92	17.58	19.32	3.45	60.27
28	William G. McMillan	19.08	17.94	19.26	3.96	60.24
29	Ambrose R. W. Cohen	20.10	16.50	21.30	2.20	60.10
30	Mark L. Bristol	19.56	18.42	19.62	2.20	59.80
30	Henry L. Peckham	18.96	18.48	18.96	3.40	59.80
32	John A. Ubsdell	18.90	15.78	21.36	3.27	59.31
33	Walter S. Burke	18.90	19.50	16.98	3.81	59.19
34	William J. Murray	18.84	18.96	18.66	2.63	59.09
35	Jasper C. Salter	18.54	18.48	18.54	3.00	58.56
36	Clarence M. Stone	17.52	19.56	18.60	2.45	58.13
37	William S. La Tourette	18.18	17.88	18.54	3.47	58.07
38	Ford H. Brown	15.00	21.54	17.10	3.84	57.48
39	Eli K. Cole	19.08	18.48	16.26	3.32	57.14
40	Victor Blue	17.34	16.92	18.84	3.81	56.91
41	Charles S. Hill	18.12	15.24	19.98	3.28	56.62
42	Herbert L. Draper	20.34	15.84	16.68	3.52	56.38
43	William B. Moseley	18.48	15.78	18.42	3.63	56.31

Merit-roll of naval cadets of the fourth class (85 members) at the annual examination, June, 1884.—Continued.

Order of annual merit.	Name.	English and history.	Algebra and geometry.	French and Spanish.	Conduct.	Aggregate.
	Maxima	24	24	24	4	76
44	Creighton Churchill	17.28	15.84	19.68	3.29	56.09
45	Thomas M. O'Halloran	17.58	16.32	18.30	3.40	55.60
46	Morris P. Bachman	17.28	15.96	18.42	3.79	55.45
47	Samuel P. Edmonds	16.44	18.78	17.04	3.17	55.43
48	Charles F. Cash	17.16	17.04	18.18	2.99	55.37
49	Archibald H. Scales	19.02	16.44	16.98	2.92	55.36
50	Richard H. Jackson	18.06	15.06	18.36	3.67	55.15
51	Lewis A. Kalbach	16.56	15.96	18.60	3.84	54.96
52	John J. Martin	17.22	18.42	16.92	2.25	54.81
53	James M. Bower	18.00	15.72	17.88	3.16	54.76
54	Ross Coleman	18.42	16.80	16.02	3.39	54.63
55	Frederick E. Swanstrom	19.08	16.32	15.90	3.15	54.45
56	William F. Bruns	18.72	16.14	16.14	3.25	54.25
57	Henry A. Allen	18.12	16.14	15.96	3.68	53.90
58	Charles C. Craig	17.34	16.62	16.74	3.19	53.89
59	Walter R. Allen	16.74	18.24	16.26	2.53	53.77
60	Claude S. Cochran	16.32	17.58	15.54	3.59	53.03
61	Joseph V. Ricketts	16.14	15.90	17.16	3.59	52.79
62	Miles G. O'Neill	16.86	16.50	15.84	3.56	52.76
63	Francis Boughter	16.74	17.16	16.20	2.60	52.70
64	James W. Sims	15.84	16.08	17.04	3.72	52.68
65	Joseph J. Welsh	16.02	17.58	16.02	2.77	52.39
66	Colin S. Craig	16.50	15.90	16.68	3.16	52.24
67	Henry C. Rodgers	17.88	14.82	16.80	2.56	52.06
68	George W. Eyre	15.90	17.34	15.48	3.21	51.93
69	James G. Ballinger	16.68	15.90	17.16	2.08	51.82
70	Frank M. Russell	16.14	15.48	16.56	3.49	51.67
71	Henry A. Wiley	16.08	15.66	16.08	3.47	51.29
72	William P. Eyre	16.26	15.36	16.68	2.48	50.78
73	Thomas S. Jewett	16.20	15.54	15.30	2.45	49.49
74	William C. Callaghan	15.30	15.60	16.32	1.88	49.10
75	John S. Carnahan	15.00	15.00	15.18	2.71	47.89
75	August A. Straub	15.60	15.12	15.90	1.27	47.89
77	Fred G. Moore	15.54	15.30	15.06	1.51	47.41
†	Louis le S. Young	15.90	14.34	17.46	3.32	51.02
†	Guy H. Burrage	15.30	17.16	14.22	3.80	50.48
†	Harry W. McGee	15.66	14.40	16.86	3.25	50.17
†	William R. Wilmer	14.58	15.06	15.78	3.49	48.91
†	Charles E. Hudson	15.30	15.24	14.52	3.39	48.45
§	Charles K. Luzenberg	15.78	14.04	17.10	2.01	48.93
§	George W. Fitzgerald	14.22	13.68	14.64	2.49	45.03
§	Charles T. Phillips	14.64	13.92	15.06	0.29	43.91

REGULATIONS

GOVERNING

THE ADMISSION OF CANDIDATES INTO THE NAVAL ACADEMY AS NAVAL CADETS.

NOMINATIONS.

I. The students at the Naval Academy shall be styled *Naval Cadets*.—(*Rev. Stat.*, § 1512, and act of Congress approved August 5, 1882.)

II. There shall be allowed at said Academy one Naval Cadet for every Member or Delegate of the House of Representatives, one for the District of Columbia, and ten at large.—(*Rev. Stat.*, § 1513, and act of Congress approved June 17, 1878.)

III. "The Secretary of the Navy shall, as soon after the fifth of March in each year as possible, notify, in writing, each member and Delegate of the House of Representatives of any vacancy that may exist in his district. The nomination of a candidate to fill said vacancy shall be made upon the recommendation of the Member or Delegate, if such recommendation is made by the first day of July of that year; but if it is not made by that time, the Secretary of the Navy shall fill the vacancy. The candidate allowed for the District of Columbia and all the candidates appointed at large shall be selected by the President."—(*Rev. Stat.*, § 1514.)

IV. "Candidates allowed for Congressional districts, for Territories, and for the District of Columbia must be actual residents of the districts or Territories, respectively, from which they are nominated. And all candidates must, at the time of their examination for admission, be between the ages of fourteen and eighteen years, and physically sound, well-formed, and of robust constitution."—(*Rev. Stat.*, § 1517.)

V. Candidates who may be nominated in time to enable them to reach the Academy by the fifteenth of May will receive permission to present themselves on that date to the Superintendent for examination for admission. Those who may not be nominated in time to present themselves at the May examination will be examined on the first of September following.

When either of the above dates shall fall on Sunday the candidates shall present themselves on the Monday following.

EXAMINATION.

VI. "All candidates for admission into the Academy shall be examined according to such regulations and at such stated times as the Secretary of the Navy may prescribe. Candidates rejected at such examination shall not have the privilege of another examination for admission to the same class unless recommended by the Board of Examiners."—(*Rev. Stat.*, § 1515.)

VII. "When any candidate who has been nominated upon the recommendation of a Member or Delegate of the House of Representatives is found, upon examination, to be physically or mentally disqualified for admission, the Member or Delegate shall be notified to recommend another candidate, who shall be examined according to the provisions of the preceding section."—(*Rev. Stat.*, § 1516.)

VIII. Candidates will be examined physically by a board composed of three medical officers of the Navy; any one of the following conditions will be sufficient to cause the rejection of a candidate; viz.,

Feeble constitution, inherited or acquired;

Greatly retarded development;
 Permanently impaired general health;
 Decided cachexia, diathesis, or predisposition;
 All chronic diseases or results of injuries that would permanently impair efficiency;

viz.,

Weak or disordered intellect;
 Cutaneous and communicable diseases;
 Unnatural curvature of spine, torticollis, or other deformity;
 Permanent inefficiency of either of the extremities or articulations from any cause;
 Epilepsy or other convulsions within five years;
 Impaired vision, chronic disease of the organs of vision, imperfect color sense (visual acuteness must not fall below eleven-twentieths of the normal in either eye);
 Great hardness of hearing or chronic disease of the ears;
 Chronic nasal catarrh, ozæna, polypi, or great enlargement of the tonsils;
 Impediments of speech to such an extent as to impair efficiency in the performance of duty;
 Chronic diseases of heart or lungs or decided indications of liability to cardiac or pulmonary affections;
 Hernia or retention of testes in inguinal cavity;
 Sarcocoele, hydrocele, stricture, fistula, or hæmorrhoids;
 Large varicose veins of lower limbs, scrotum, or cord;
 Chronic ulcers.

Attention will also be paid to the stature of the candidate, and no one *manifestly* under size for his age will be received at the Academy. In the case of doubt about the physical condition of the candidate, any marked deviation from the usual standard of height will add materially to the consideration for rejection. Five feet will be the minimum height for the candidate.

IX. Candidates will be examined mentally by the Academic Board in reading, writing, spelling, arithmetic, geography, English grammar, history, and algebra. All the examinations, except in reading, will be written. Deficiency in any one of these subjects will be sufficient to insure the rejection of a candidate.

GENERAL CHARACTER OF THE EXAMINATION.

READING.—In *Reading*, candidates must be able to read understandingly, and with proper accent and emphasis.

WRITING AND ORTHOGRAPHY.—In *Writing and Orthography*, they must be able to write, from dictation, sentences from standard pieces of English literature, both prose and poetry, sufficient in number to test their qualifications both in handwriting and orthography.

X. ARITHMETIC.—The candidate will be required—

To express in figures any whole, decimal, or mixed number; to write in words any given number; to perform with facility and accuracy the various operations of addition, subtraction, multiplication, and division of whole numbers whether abstract or compound, and to use with facility the tables of money, weight, and measures in common use, including English money.

To reduce compound numbers from one denomination to another, and to express them as decimals, or fractions of a higher or lower denomination; to state the number of cubic inches in a gallon and the relation between the Troy and Avoirdupois pounds and to reduce differences of time to differences of longitude and *vice versa*.

To define prime and composite numbers; to give the tests of divisibility by 3, 5, 8, 9, 11, 25, and 125; to resolve numbers into their prime factors, and to find the least common multiple and the greatest common divisor of large as well as of small numbers.

To be familiar with all the processes of common and decimal fractions, and to give clearly the reasons for such processes, and to be able to use the contracted methods of multiplication and division given in the ordinary text-books on Arithmetic.

To define ratio and proportion, and to solve problems in simple and compound proportion.

To solve problems involving the measurement of rectangular surfaces and of solids, to find the square and cube roots of numbers, and to solve simple problems under percentage, interest, and discount.

The candidates are required to possess such a thorough understanding of all the fundamental operations of Arithmetic as will enable them to apply the various principles to the solution of any complex problem which can be solved by the methods of Arithmetic; in other words, they must possess such a complete knowledge of Arithmetic as will enable them to proceed at once to the higher branches of Mathematics without further study of Arithmetic.

ALGEBRA.—The examination in *Algebra* will be elementary in character, and will be limited to questions and problems upon the fundamental rules, factoring, algebraic fractions, and simple equations of one or more unknown quantities; the questions will be drawn entirely from Ray's Higher Algebra, pages 11 to 111.

GRAMMAR.—In *English Grammar* candidates must exhibit a familiarity with all the parts of speech and the rules in relation thereto; must be able to parse any ordinary sentence given to them, and generally must understand those portions of the subject usually taught and comprehended under the heads of Orthography, Etymology, and Syntax.

The questions will usually be arranged in three divisions. The first division will contain questions somewhat like these:

Explain the uses of the objective case. What verbs have distinction of voice? Give the possessive plural of sea, valley, basis, stratum, bandit.

The second division will contain one or more sentences to be parsed, *e. g.*:

"They were always a strange family; they rarely acted like other people; their hearts were in the right place, but their heads always seemed to be doing anything but what they ought." Such a sentence must be parsed fully, giving the part of speech, and kind, case, voice, mood, tense, number, person, degree of comparison, etc., as the case may be, of each word, and its relation to the other words, thus:

Strange is a descriptive adjective, positive degree. It qualifies the noun family.

Comparative, stranger.

Superlative, strangest.

Acted, an intransitive verb, regular (or weak) in conjugation, indicative mood, past tense, third person, plural number. Its subject is *they*.

The third division will contain a large number of incorrect sentences to be corrected, thus:

My brother lives most all of nine miles from Topeka; it's sort of lonesome out there, and I reckon he don't like it much. You see it's considerable of a ways to go, but I'd as lives go as not. Among these, correct sentences will sometimes be introduced to more thoroughly test the knowledge of the candidate.

Since the school grammars used in different parts of the country vary among themselves in their treatment of certain words, an answer indorsed by any grammar of good repute will be accepted.

GEOGRAPHY.—Candidates will be required to pass a satisfactory examination, written or oral, or both, in descriptive geography, particularly of our own country. Questions will be given under the following heads: The definition of latitude and longitude; the zones; the grand divisions of the land and water; the character of coast-lines; the direction and position of important mountain-chains and the locality of the higher peaks; the position and course of the principal rivers, their tributaries, and the bodies of water into which they empty; the position of important seas, bays, gulfs, and arms of the sea; the position of independent states, their boundaries and capital cities; the position and direction of great peninsulas and the situation of important and prominent capes, straits, sounds, channels, and the most important canals; great lakes and inland seas; position and political connection of important islands and colonial

possessions; locality of cities of historical, political, or commercial importance (attention is especially called to the rivers and bodies of water on which cities are situated); the course of a vessel in making a voyage between well known sea-ports.

The candidate's knowledge of the geography of the *United States* cannot be too full or specific on all the points referred to above. Accurate knowledge will also be required of the position of the country with reference to other States, and with reference to latitude and longitude; of the boundaries and relative position of the States and Territories, and of the name and position of their capitals, and of other important cities and towns.

HISTORY.—Candidates should be familiar with so much of the history of the United States as is contained in the ordinary school histories.

The examination will be either written or oral, or both, and questions of the same general character as the following will be given :

1. Name the earliest European settlements within the present limits of the United States, and fix their position. When and by whom were these settlements made ?
2. Explain the three forms of government in the colonies, royal, proprietary, and charter. Name the colonies that originally existed within the present limits of Massachusetts; of Connecticut. When were those colonies united ? What did the colony of Pennsylvania include ? When was it divided ?
3. State the leading events of the colonial wars, and give the results of each war.
4. What were the remote and immediate causes of the Revolution ? Explain the navigation acts, the stamp act, writs of assistance. Name the principal battles and other leading events in the wars of the United States, giving the names of commanding officers and stating the results of the battles.
5. Give an account of the formation and-adoption of the Constitution.
6. Give the names of the Presidents, in order, and the leading events in each administration.

ADMISSION.

XI. Candidates who pass the physical and mental examinations will receive appointments as Naval Cadets, and become inmates of the Academy. Each cadet will be required to sign articles by which he binds himself to serve in the United States Navy eight years (including his time of probation at the Naval Academy), unless sooner discharged. The pay of a Naval Cadet is \$500 a year, commencing at the date of his admission.

XII. Cadets, immediately after their admission, will supply themselves with the following articles; viz.,

One parade suit	\$31 25	*Four pairs of drawers	\$3 00
One undress suit	18 75	*Twelve white handkerchiefs	3 00
Two working suits	2 34	*Eight towels	2 00
One overcoat	22 00	One pair of drill gloves	1 00
One rubber coat	3 75	Six pairs of white thread gloves	1 62
One pair of rubber leggins	90	*One pair of suspenders	38
Two pairs of white duck leggins	1 84	Two black silk neck-ties	80
One rubber hat	53	Two clothes-bags	52
One parade cap	2 81	One hair mattress	6 66
One undress cap	1 45	One straw mattress	1 32
*One whisk	13	Two pairs of high shoes	11 50
*One coarse comb	11	One pair of overshoes	1 60
*One fine comb	37	*Eight white shirts	9 68
One mug	10	*Three nightshirts	2 25
*One cake of soap	10	*Four undershirts	3 00
One soap-box	62	Twelve linen collars	1 68
One requisition-book	42	Eight pairs of cuffs	2 00
One laundry-book	36	Four pillow-cases	1 00
*Eight pairs of socks	2 00	*One tooth-brush	21

*One hair-brush	\$0 69	One looking-glass	\$0 95
One hair pillow	93	One slop-jar	1 15
One pair of blankets	4 00	One broom	27
Two bedspreads	2 30	Two spatter-cloths	1 10
Six sheets	3 84	One oil-cloth	63
One pass-book	50	One jack-knife	53
One stencil, ink, and brush	45	One paper-weight	45
One bottle of indelible ink	18		
One rug	1 53	Total	\$163 51
One wash-basin and pitcher	96		

The articles marked *, not being required to conform to a standard pattern, may be brought by the Cadet from home, but all other articles must conform to the regulations and must, therefore, be supplied by the storekeeper.

Each Naval Cadet must, on admission, deposit with the paymaster the sum of \$20, for which he will be credited on the books of that officer, to be expended, by direction of the Superintendent, in the purchase of text-books and other authorized articles besides those enumerated in the preceding article.

All the deposits for clothing and the entrance-deposit of \$20 must be made before a candidate can be received into the Academy.

SUMMARY OF EXPENSES.

Deposit for clothing	\$163 51
Deposit for books, &c	20 00

Total deposit required	\$183 51
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The value of clothing brought from home is to be deducted from this amount.

Each Naval Cadet, *one month after admission*, will be credited with the amount of his actual expenses in traveling from his home to the Academy.

XII. A Naval Cadet who voluntarily resigns his appointment within a year of the time of his admission to the Academy will be required to refund the amount paid him for traveling expenses.

WILLIAM E. CHANDLER,
Secretary of the Navy.

COURSE OF INSTRUCTION.

[Reference Books are marked thus (*).]

FIRST YEAR—FOURTH CLASS.

FIRST TERM.

Department.	Weekly recitations.	Number of months.	Subjects.	Text-books.
<i>Mathematics.</i>	4	4	ALGEBRA: Fundamental operations; reduction and conversion of fractional and surd quantities; reduction and solution of equations of the first and second degrees; inequalities; involution and evolution.	Ray's Higher Algebra. Todhunter's Algebra.*
	2	4	GEOMETRY: Geometry of the straight line, of the circle, and the plane; theory of proportion; properties of similar figures.	Chauvenet's Geometry.
<i>English Studies, History, and Law.</i>	2	4	ENGLISH: The structure and historical development of the English language; punctuation and capitals; exercises in the composition of letters.	Lounsbury's History of the English Language; Hart's Punctuation. Webster's Dictionary.*
	3	4	HISTORY: Outlines of history, especially the history of Greece and Rome, and of the states of Western Europe down to 1880; historical geography; important points in naval history, by notes or lectures.	Freeman's General Sketch of History. Labberton's Historical Atlas.*
<i>Modern Languages.</i>	5	4	FRENCH: Robertson's Method; reading and translating "Le Conscriit."	Robertson's French Course; Le Conscriit de 1813. Keetel's Grammar.* Gasc's Dictionary.*

FIRST YEAR—FOURTH CLASS—Continued.

SECOND TERM.

Department.	Weekly recitations.	Number of months.	Subjects.	Text-books.
<i>Mathematics.</i>	2	4	ALGEBRA: Course for first term continued. Development of algebraic functions by means of indeterminate coefficients and the binomial theorem; permutations and combinations; summation of series; continued fractions; logarithms; exponential equations; theory of equations, including the solution of numerical equations.	Ray's Higher Algebra. Todhunter's Algebra.* Bowditch's Useful Tables.*
	3	4	GEOMETRY: Course for first term continued. Spherical geometry; the cone and the cylinder; mensuration of rectilinear figures, and of the sphere, cone, and cylinder; application of algebra to determinate geometry.	Chauvenet's Geometry.
<i>English Studies, History, and Law.</i>	2	4	ENGLISH: Rhetoric and composition; choice and use of words; kinds of composition; narration and description; argumentative composition; exercises in the composition of letters and telegrams. Themes.	Hill's Rhetoric.
	3	4	HISTORY: Progress of colonial development in America, and the history of the United States; important points in the naval history of the United States, by notes or lectures.	Eliot's History of the United States. Mitchell's Atlas.*
<i>Modern Languages.</i>	5½†	4	FRENCH: Reading and translating "Le Conscriit", three periods a week. Written translations from English into French, two periods a week; the Saturday period to be devoted chiefly to dictation.	Le Conscriit de 1813. Keetel's Grammar.* Gasc's Dictionary.*
	2	4	SPANISH: Robertson's method. [Given as an advanced course.]	Robertson's Spanish Course.

†Saturday morning period.

SECOND YEAR—THIRD CLASS.

FIRST TERM.

Department.	Weekly recitations.	Number of months.	Subjects.	Text-books.
<i>Mathematics.</i>	1	4	DESCRIPTIVE GEOMETRY: Orthographic projections; representation of points, lines, and planes; problems relating to the right line and the plane; representations of surfaces of the second order.	Church's Descriptive Geometry.
	4	4	TRIGONOMETRY: Measures of arcs and angles; trigonometric functions; analytical investigation of trigonometric formulas, with their application to all the cases of plane and spherical triangles; construction and use of trigonometric tables; inverse trigonometric functions; De Moivre's theorem; solution of trigonometric equations; practical applications of trigonometry to the solution of plane and spherical triangles, the astronomical triangle, and the measurements of heights and distances.	Chauvenet's Trigonometry; Todhunter's Trigonometry. Bowditch's Useful Tables.*
<i>English Studies, History, and Law.</i>	3	1	ENGLISH: Classification of words; definition of words by usage and by derivation; synonyms; laws of change in the meaning of words; faults in diction and their remedies; selection and arrangement; elementary principles of reasoning; principles of composition; exercises in the composition of official dispatches, letters, and telegrams. Themes.	Abbott and Seeley's English Lessons for English People; Abbott's How to Write Clearly.
	2	3		Ayres's Orthoëpist.* Ayres's Verbalist.*
	2	1	HISTORY: Contemporary history, including the comparative study of governments, institutions, and political geography.	The School Herald.
	1	3		Martin's Statesman's Year Book. Mitchell's Atlas.*
	2	3	LAW: Constitution of the United States.	Andrews's Manual of the Constitution.
<i>Modern Languages.</i>	5	4	FRENCH: Reading and translating French comedy, three periods a week. Written translations from English into French, or themes; two periods a week.	Bôcher's Series of French Plays. Keetel's Grammar;* Gasc's Dictionary.*
	1	4	SPANISH: Robertson's method; sea terms and phrases, and conversations thereon. [Given as an advanced course.]	La Calmena Española. Robertson's Spanish Course.*
<i>Mechanical Drawing.</i>	1	4	MECHANICAL DRAWING: Use of instruments; preliminary construction of rectilinear and curved figures to scale; inking in; drawing section lines.	Tomkin's Machine Construction and Drawing.*

SECOND YEAR—THIRD CLASS—Continued

SECOND TERM.

Department.	Weekly recitations.	Number of months.	Subjects.	Text-books.
<i>Mathematics.</i>	1	4	DESCRIPTIVE GEOMETRY: Course for first term continued. Warped surfaces, and surfaces of revolution; development of single-curved surfaces; intersection of surfaces; tangent lines and planes; projections of the sphere; axometric projections; shades and shadows.	Church's Descriptive Geometry.
	4	4	ANALYTICAL GEOMETRY: Equations of the straight line and of the conic sections; transformation of co-ordinates; properties of the conic sections; equations to tangents and normals; determination of loci; discussion of the general equation of the second degree; equations of the plane, of lines in space, and of surfaces of the second order; principal properties of surfaces of the second order; discussion of the general equation of the second degree in three variables.	C. Smith's Conic Sections; Aldis's Solid Geometry.
<i>Physics and Chemistry.</i>	5	4	PHYSICS: Force and motion; gravitation and molecular attraction; hydrostatics; pneumatics. CHEMISTRY: Aim and scope of chemistry; the atmosphere; oxygen, nitrogen, water, and hydrogen; nitric and chlorhydric acids; acids, bases, and salts; chlorine group; sulphur and phosphorus, and their compounds. Laws of Avogadro, Charles, and Mariotte; formulas; basicity; notation and nomenclature; arsenic, antimony, and bismuth; combustion; carbon and its compounds, boron and silicon; the alkali group; the calcium group; magnesium and zinc; the sesquioxide group; copper, mercury, and tin; gold and platinum; atomic weights. Practical work in the chemical laboratory. Lectures.	Ganot's Physics. Eliot and Storer's Manual of Chemistry. Lecture notes.
<i>Mechanical Drawing.</i>	5½†	4	MECHANICAL DRAWING: Orthographic projections, sections, intersection of surfaces, isometrical drawing, perspective, drawing of screws, bolts, nuts, spur-gears, bevel-gears, and other details of gun-carriages, engines, and naval machinery.	Tonkin's Machine Construction and Drawing.*

† Saturday morning period.

THIRD YEAR—SECOND CLASS.

FIRST TERM.

Department.	Weekly recitations.	Number of months.	Subject.	Text-books.
<i>Steam engineering.</i>	4	4	MARINE ENGINES AND BOILERS: Explanation of all the parts of the engine; types of engines; steam valves and other valves; generation of steam; distribution and expansion of steam; screw propellers and side-wheels; the indicator and its diagrams; power of an engine and computations relating thereto; hydrometers; saturation; scale and its prevention; casualties; boilers; materials; combustion; transfer of heat; testing steam-engines; principles of mechanism.	King's Lessons and Notes on the Steam-Engine; Northcott's Steam-Engine. Goodeve's Elements of Mechanism.
<i>Physics and chemistry.</i>	5	4	SOUND, LIGHT, AND HEAT: Properties of sound; atmospheric and other vibrations; properties of light; optical instruments; double refraction; polarization; temperature and its measurement by thermometers; dilatation of solids, liquids, and gases; application of the laws of dilatation; changes of state; liquefaction and solidification; production of vapor and its condensation; effect of heat upon other properties of matter; radiant heat and its reflection and radiation; theory of exchanges; conduction and convection; specific and latent heat; relation between heat and mechanical effect; thermodynamics. Lectures.	Ganot's Physics. Balfour Stewart's Elementary Treatise on Heat.
<i>Mechanics and applied mathematics.</i>	5	2	DIFFERENTIAL CALCULUS: Functions; rates; differentials of functions; indeterminate forms; series; maxima and minima; geometrical applications; functions of two or more variables.	Rice and Johnson's Differential Calculus.
	5	2	INTEGRAL CALCULUS: The methods of integration; definite integrals; quadrature of surfaces; cubature of volumes; rectification of curves; centres of gravity; moments of inertia; planimeters; rules for the approximate determination of areas and volumes; differential equations.	Johnson's Integral Calculus.
<i>Mechanical drawing.</i>	2	4	MECHANICAL DRAWING: Practice in drawing ordnance, ordnance accessories, and the various kinds of implements and machinery used in the naval service.	Tompkin's Machine Construction and Drawing.

THIRD YEAR—SECOND CLASS.

SECOND TERM.

Department.	Weekly recitations.	Number of months.	Subject.	Text-books.
<i>Steam engineering.</i>	†3½	4	Course for first term continued.	
<i>Physics and chemistry.</i>	5	4	ELECTRICITY AND MAGNETISM: Frictional electricity; magnetism; current electricity; electrostatics; electromagnetics; measurement of currents; heat, light, and work from electric currents; thermo-electricity; induction currents; electrochemistry; telegraphs and telephones. Electrical machines; potential; electrometers; theory of absolute measurement; specific inductive capacity; measurement of resistances. Practical lessons with batteries; practical work with electrical and dynamo-machines; measurement of resistances; galvanometers; determination of dip and intensity; use of magnetometer. Fox dip-circle; absolute electrometer; dynamometer, and secondary batteries. Lectures on metallurgy of gun-metals, and on theory and action of explosives. Practical exercises in the laboratory illustrating the formation and action of explosives; testing oils and paints.	Thompson's Electricity and Magnetism. Kempe's Hand-Book of Electrical Testing. Day's Exercises in Electrical Measurement. Day's Electric Light Arithmetic. Kohlrausch's Physical Measurements.*
<i>Mechanics and applied mathematics.</i>	5	4	MECHANICS: Kinematics; dynamics; kinetics; hydro-mechanics; the motion of projectiles; friction and other resistances; the application of mechanical principles to simple machines and to instruments.	Bartlett's Mechanics. Walton's Problems in Elementary Mechanics.
<i>English studies, history, and law.</i>	2	4	INTERNATIONAL LAW: The rights and duties of States; the powers and duties of diplomatic envoys, consuls, and naval commanders; nationality, as to persons and as to vessels; jurisdiction over vessels, at sea and in territorial waters; the relations of ships of war, at sea and in foreign ports; fugitives and deserters; the laws of war; hostile measures falling short of war; privateers; the rights and duties of neutrals; enemy's property on land and at sea; the right of search; prizes; blockade; contraband; licenses to trade; recaptures; treaty of peace.	Woolsey's International Law.

†Saturday morning period.

FOURTH YEAR—FIRST CLASS.

FIRST TERM.

Department.	Weekly recitations.	Number of months.	Subjects.	Text-books.
<i>Seamanship, naval construction, and naval tactics.</i>	4	4	<p>NAVAL CONSTRUCTION: Wooden ship building; iron ship building; sheathing of ships; composite ships; launching; docks; docking; heaving down.</p> <p>SEAMANSHIP: Rigging ships; fitting ships for sea; stowage; bending and unbending sails; evolutions; duties of officers; repairs to rigging and spars; emergencies; organization; fitting and management of boats.</p> <p>Rules of the road; laws of storms.</p> <p>NAVAL TACTICS: Orders of steaming; fleet manœuvres.</p> <p>Signaling.</p>	<p>Wilson's Ship Building; Thearle's Naval Architecture.</p> <p>Reid's Ship Building.*</p> <p>Luce's Seamanship.</p> <p>Publications of the Bureau of Equipment and Recruiting.</p> <p>Navy Department pamphlets.</p> <p>Parker's Fleet Tactics.</p> <p>Signal Books.</p>
<i>Ordnance and gunnery.</i>	3		<p>ORDNANCE INSTRUCTIONS: Handling great guns; preparing ship for action; duties of officers and men when at quarters for exercise, and when engaged in battle.</p> <p>Handling boat howitzers and machine guns, afloat and on shore.</p> <p>Landing of seamen and marines.</p> <p>INFANTRY TACTICS: School of the soldier; school of the company; school of the battalion; instructions for skirmishers.</p> <p>GUNNERY: The motion of projectiles in a non-resisting medium and in air; the methods of Niven and of Sladen for finding the trajectory, the remaining velocity, and the angle of fall; the dangerous space; sighting and pointing guns; the errors liable to occur in practice at sea, and the methods of avoiding them; the preparation of range tables and corrections for jump and drift; the determination of ranges at sea.</p>	<p>Ordnance Instructions.</p> <p>Upton's Tactics.</p> <p>Text-Book of Ordnance and Gunnery (Naval Academy Publication.)</p> <p>Mackinlay's Principles of Gunnery.</p>
<i>Astronomy, navigation, and surveying.</i>	6	4	<p>THE CELESTIAL SPHERE: Spherical and rectangular co-ordinates; use of instruments, especially those for determining terrestrial latitudes and longitudes; refraction; dip; parallax; the earth, sun, planets, and solar system in general; different units of time and calendars; laws of universal gravitation, precession, nutation, and aberration; the moon; eclipses and occultations; tides; nebular hypothesis; comets and meteoric bodies; fixed stars; nebulae; motion of the solar system; solutions of the astronomical triangle; use of the Nautical Almanac.</p>	<p>White's Astronomy; Chauvenet's Spherical and Practical Astronomy; Bowditch's Navigator; American Ephemeris and Nautical Almanac.</p>

FOURTH YEAR—FIRST CLASS.

FIRST TERM—Continued.

Department.	Weekly recitations.	Number of months.	Subjects.	Text-books.
<i>Astronomy, navigation, and surveying.</i>			THE THEORY AND PRACTICE OF NAVIGATION, the latter including instruction in the duties of the navigator, the construction and use of navigating instruments, the use of the tables and solution of problems; determination of meridian distances.	Coffin's Navigation; Notes on Navigation and Meridian Distances.
<i>Mechanics and Applied Mathematics.</i>	3	1	METHOD OF LEAST SQUARES: The theory of least squares and probable errors; fundamental principles of the theory; practical methods and formulas; independent observations; conditioned observations.	Merriman's Method of Least Squares.
	3	3	APPLIED MECHANICS: Elasticity; stress and strain; theory of structures; strength and deflection of beams; beams of uniform resistance.	Cotterill's Applied Mechanics.

SECOND TERM.

<i>Seamanship, naval construction, and naval tactics.</i>	5	4	Course in seamanship continued.	
<i>Ordnance and gunnery.</i>	*5½	4	<p>GUNNERY: Accuracy and rapidity of fire; the probability of hitting objects of various forms; the mean and probable errors of guns; derivation of rules for correcting certain errors which arise in practice at sea; the penetration and effect of projectiles.</p> <p>ORDNANCE: The manufacture of guns; description of service guns; computation of the strength and shrinkage of guns; rifling; rotation and its influence on the motion of projectiles. The manufacture and use of gunpowder and other explosives; the force developed when explosives are fired in their own volume, and the equation of motion of the projectile in the bore of a gun on this hypothesis, and also on the hypothesis that the explosive burns progressively; the laws of burning of grains of gunpowder of various forms; the formulas of Noble and Abel connecting pressures with density of loading, and for determining the work of expansion in a gun; development of the principles involved in loading guns; formulas connecting muzzle velocities and pressures with the elements of loading.</p>	<p>Text-Book of Ordnance and Gunnery (Naval Academy Publication). Breger's Probability of Hitting an Object.</p> <p>Virgile's Construction of Guns; Sarrau on the Effects of Powder in Guns.</p>

* Saturday period.

FOURTH YEAR—FIRST CLASS.

SECOND TERM—Continued.

Department.	Weekly recitations.	Number of months.	Subjects.	Text-books.
<i>Ordnance and gunnery.</i>	*5½	4	GUN CARRIAGES: Their construction and the mechanism employed in controlling and adjusting recoil, and the theory of such control. AMMUNITION: Its preparation and use.	
<i>Astronomy, navigation, and surveying.</i>	5	4	THEORY OF DEVIATION OF THE COMPASS, including the derivation and transformation of the fundamental equations, the nature and causes of the several parts of deviation, the determination of the vertical and horizontal forces of the earth and ship, and of the values of the approximate and exact coefficients, the causes and amount of the heeling error, the changes which take place upon a change of geographical position, the graphic representations of the amount and direction of the forces which act on the needle, and the mechanical correction of the deviation and heeling errors. Navigation concluded.	Howell's Theory of the Deviations of the Compass; Evans's Elementary Manual for the Deviations of the Compass in Iron Ships.
	5	4	SURVEYING: The instruments used; selection and measurement of bases; determination of azimuth of base; triangulation; determination of heights; leveling; plotting a survey; hydrographical surveying, including the Coast Survey methods; tidal observations; current observations; sailing directions; the form of the earth, with special reference to the construction of charts; projection by development; Mercator's, Flamsteed's, and Bonne's projections; the ordinary polyconic projection of the United States Coast Survey; running surveys; portable transit instrument and zenith telescope. Astronomy concluded.	Chauvenet's Spherical and Practical Astronomy; Howell's Marine Surveying; Projection Tables; Bowditch's Navigator.

* Saturday period.

ASSIGNMENT OF TIME.

Departments.	Fourth class.		Third class.		Second class.		First class.	
	1st term.	2d term.	1st term.	2d term.	1st term.	2d term.	1st term.	2d term.
Astronomy, Navigation, and Surveying . . .	.	.	.	.	.	.	6	5
Drawing . . . . .	.	.	1	5½	2	.	.	.
English Studies, History, and Law	5	5	5	.	.	2	.	.
Ordnance and Gunnery . . . . .	.	.	.	.	.	.	3	5½
Mathematics	6	5	5	5	.	.	.	.
Mechanics and Applied Mathematics . . .	.	.	.	.	5	5	3	.
Modern Languages	5	5½	5	.	.	.	.	.
Physics and Chemistry . . . . .	.	.	.	5	5	5	.	.
Seamanship, Naval Tactics, and Naval Construction .	.	.	.	.	.	.	4	5
Steam Engineering . . . . .	.	.	.	.	4	3½	.	.

PROGRAMME OF RECITATIONS.

FIRST TERM.

Departments.	Fourth class.	Third class.	Second class.	First class.
Astronomy, Navigation, and Surveying	.	.	.	M. T. W. Th. F. S. (1).
Drawing	.	S. (1)	M. T. (3).	.
English Studies, History, and Law	M. T. W. Th. F. (2)	M. T. W. Th. F. (3).	.	W. (3), Th. F. (2).
Ordnance and Gunnery	.	M. T. W. Th. F. (2).	.	M. T. W. (2).
Mathematics	M. T. W. Th. F. S. (1)	M. T. W. Th. F. (1).	M. T. W. Th. F. (1)	.
Mechanics and Applied Mathematics	.	.	M. T. W. Th. F. (2).	M. T. Th. F. (3).
Modern Languages	M. T. W. Th. F. (3)	.	W. Th. F. (3), S. (1).	.
Physics and Chemistry	.	.	.	.
Seamanship, Naval Tactics, and Naval Construction	.	.	.	.
Steam Engineering	.	.	.	.

SECOND TERM.

Astronomy, Navigation, and Surveying	.	M. T. W. Th. F. (3), S. (1)	F. (7.30 to 9.30 p. m.) *	M. T. W. Th. F. (1).
Drawing	.	.	M. T. (3).	.
English Studies, History, and Law	M. T. W. Th. F. (2)	.	.	M. T. W. Th. F. (2), S. (1).
Ordnance and Gunnery	.	M. T. W. Th. F. (2)	.	.
Mathematics	M. T. W. Th. F. (1)	.	M. T. W. Th. F. (1).	.
Mechanics and Applied Mathematics	.	{ M. T. W. Th. F. (1), F. (7.30 to 9.30 p. m.) }	M. T. W. Th. F. (2).	M. T. W. Th. F. (3).
Modern Languages	M. T. W. Th. F. (3), S. (1)	.	W. Th. F. (3), S. (1)	F. (7.30 to 9.30 p. m.) *
Physics and Chemistry	.	.	.	.
Seamanship, Naval Tactics, and Naval Construction	.	.	.	.
Steam Engineering	.	.	.	.

* Lectures and practical instruction during March, April, and May.

TABLE OF COEFFICIENTS.

Department and subjects.	Fourth class.	Third class.	Second class.	First class.	Maxima for four years.	Maxima for final graduation.
<i>Astronomy, Navigation, and Surveying.</i>						
Astronomy, Surveying, Theory of Navigation, Practical Navigation, and Theory of Compass Deviation . . . . .	.	.	.	20	80	48
<i>Drawing.</i>						
Mechanical Drawing . . . . .	.	6	4		40	
<i>English Studies, History, and Law.</i>						
English and History	6					
English, History, and Law . . . . .	.	6				
International Law . . . . .	.	.	4		64	
<i>Mathematics.</i>						
Algebra and Geometry	6					
Trigonometry, Analytical Geometry, and Descriptive Geometry . . . . .	.	12			72	
<i>Mechanics and Applied Mathematics.</i>						
Differential and Integral Calculus, and Mechanics. Least Squares and Strength of Materials . . . . .	.	.	14	5	76	
<i>Ordnance and Gunnery.</i>						
Ordnance Instructions, Infantry Tactics, Gunnery Ordnance and Gunnery . . . . .	.	.	.	8 12	 80	 48
<i>Modern Languages.</i>						
French and Spanish	6					
French and Spanish . . . . .	.				48	24
<i>Physics and Chemistry.</i>						
Chemistry . . . . .	.	6				
Sound, Light, and Heat . . . . .	.	.	7			
Electricity and Magnetism . . . . .	.	.	7		80	
<i>Seamanship, Naval Tactics, and Naval Construction.</i>						
Ship Building . . . . .	.	.	.	6		
Seamanship and Naval Tactics . . . . .	.	.	.	18	96	60
Cruise Reports, Journals, and Testimonials . . . . .	.	.	.	.	.	12
<i>Steam Engineering.</i>						
Steam Machinery, Marine Engines, and Boilers Practical Instruction in Steam . . . . .	.	.	18	2	80	48
Conduct	1	2	3	5	44	
Maxima for each class	76	152	228	304	760	240

Deductions for each demerit, 0.013, 0.032, 0.06, 0.133.

SEAMANSHIP.

Knotting and splicing; compass and lead line; ship nomenclature; cutting and fitting hemp rigging; cutting and fitting wire rigging; rowing, and the management of boats under oars and under sail; sail making; making up, bending, unbending, and handling sails; rigging ship; stripping ship; shifting spars; getting under way and anchoring; evolutions with vessels under sail and under steam; signaling, Myer's and Navy codes; management of steam launches; steam fleet-tactics (with steam launches).

ORDNANCE AND GUNNERY.

School of the soldier; school of the company; school of the battalion (infantry); skirmish drill; school of the battery; school of the battalion (artillery); exercises with broadside guns, pivot guns, monitor guns, mortars, boat howitzers, and machine guns; target practice with small-arms; target practice with mortars; target practice afloat with machine guns, rifled howitzers, and great guns; small-sword exercise; broadsword exercise; handling and firing torpedoes; determination of the strength and elasticity of gun-metal, with testing machine; determination of muzzle velocities with the Schultz chronoscope; determination of pressures in guns by means of pressure gauges; experimental determination of range tables, also of the jump and drift; application of photography to ordnance purposes; the preparation and inspection of ordnance material.

ASTRONOMY, NAVIGATION, AND SURVEYING.

Practical navigation; surveying and constructing a chart of a portion of the Severn River.

Swinging an iron ship, and observing the deviations and the times of vibration of horizontal and vertical needles on different courses; and from these observations finding the approximate and the exact coefficient and the horizontal and vertical forces acting on the standard and steering compasses. Also finding the heeling coefficients for the same compasses without heeling the ship.

STEAM ENGINEERING.

Vise-bench work; forging; boiler-making; pattern-making; machine-tool work; taking apart and putting together engines; running engines of launches, vessels, and monitors (motive and turret).

PROGRAMME OF PRACTICAL INSTRUCTION

When more than one exercise is prescribed during a week the number of such exercises is indicated by a figure in parenthesis.

FIRST CLASS.

Months.	Weeks.	First division.	Second division.	Third division.	Fourth division.
Oct.....	1	Company (5). Monitor (1).	Battery (5). Monitor (1).	Target great guns(5). Monitor (1).	Steam tactics (5). Monitor (1).
	2	Battery (5). Monitor (1).	Company (5). Monitor (1).	Steam tactics (5). Monitor (1).	Target great guns(5). Monitor (1).
	3	Target great guns(5). Monitor (1).	Steam tactics (5). Monitor (1).	Company (5). Monitor (1).	Battery (5). Monitor (1).
	4	Steam tactics (5). Monitor (1).	Target great guns(5). Monitor (1).	Battery (5). Monitor (1).	Company (5). Monitor (1).
Nov.....	1	Battalion infantry(5). Monitor (1).	Battalion infantry(5). Monitor (1).	Battalion infantry(5). Monitor (1).	Battalion infantry(5). Monitor (1).
	2	Seamanship (5). Monitor (1).	Seamanship (5). Monitor (1).	Seamanship (5). Monitor (1).	Seamanship (5). Monitor (1).
	3	Seamanship. Battalion artillery.	Seamanship. Battalion artillery.	Seamanship. Battalion artillery.	Seamanship. Battalion artillery.
Dec.....	1	Broad sword.	Steam.	Practical Ordnance.	Steam.
	2	Steam.	Broad sword.	Steam.	Practical ordnance.
	3	Practical ordnance.	Steam.	Broad sword.	Steam.
	4				
Jan.....	1	Steam.	Practical ordnance.	Steam.	Broad sword.
	2	Small sword.	Steam.	Practical ordnance.	Steam.
	3	Steam.	Small sword.	Steam.	Practical ordnance.
	4	Practical ordnance.	Steam.	Small sword.	Steam.
	5	SEMI-ANNUAL EXAMINATION.			
Feb.....	1	Steam.	Practical ordnance.	Steam.	Small sword.
	2	Broad sword.	Steam.	Seamanship.	Steam.
	3	Steam.	Broad sword.	Steam.	Seamanship.
	4	Seamanship.	Steam.	Broad sword.	Steam.
Mar.....	1	Steam.	Seamanship.	Steam.	Broad sword.
	2	Seamanship.	Seamanship.	Seamanship.	Seamanship.
	3	Seamanship.	Seamanship.	Seamanship.	Seamanship.
	4	Compass deviation (5). Seamanship (1).	Compass deviation (5). Seamanship (1).	Compass deviation (5). Seamanship (1).	Compass deviation (5). Seamanship (1).
Apr.....	1	General quarters.	General quarters.	General quarters.	General quarters.
	2	Target great guns(5). General quarters (1).	Skirmish (5). General quarters (1).	Steam tactics (5). General quarters (1).	Torpedoes (5). General quarters (1).
	3	Skirmish (5). Seamanship (1).	Target great guns(5). Seamanship (1).	Torpedoes (5). Seamanship (1).	Steam tactics (5). Seamanship (1).
	4	Steam tactics (5). Seamanship (1).	Torpedoes (5). Seamanship (1).	Target great guns(5). Seamanship (1).	Skirmish (5). Seamanship (1).
May.....	1	Torpedoes (5). General quarters (1).	Steam tactics (5). General quarters (1).	Skirmish (5). General quarters (1).	Target great guns(5). General quarters (1).
	2	Battalion infantry(5). Seamanship (1).	Battalion infantry(5). Seamanship (1).	Battalion infantry(5). Seamanship (1).	Battalion infantry(5). Seamanship (1).
	3	Battalion artillery(3). Seamanship (3).	Battalion artillery(3). Seamanship (3).	Battalion artillery(3). Seamanship (3).	Battalion artillery(3). Seamanship (3).
	4	Steam tactics (3). General quarters (3).	Steam tactics (3). General quarters (3).	Steam tactics (3). General quarters (3).	Steam tactics (3). General quarters (3).
(Fifth week.)	M.	Battalion infantry.	Battalion infantry.	Battalion infantry.	Battalion infantry.
	T.	Battalion artillery.	Battalion artillery.	Battalion artillery.	Battalion artillery.
	W.	General quarters.	General quarters.	General quarters.	General quarters.
	Th.	Steam tactics.	Steam tactics.	Steam tactics.	Steam tactics.
	F.	Battalion infantry.	Battalion infantry.	Battalion infantry.	Battalion infantry.
	S.	Seamanship.	Seamanship.	Seamanship.	Seamanship.
June 1 to 10.....	} ..	ANNUAL EXAMINATION.			
June 10 to Aug. 28	} ..	Practice cruise.			
Sept.....	....	On leave.			

SECOND CLASS.

Months.	Weeks.	First division.	Second division.	Third division.	Fourth division.
Oct.....	1	Company.	Battery.	Pivot guns.	Running steam launches.
	2	Battery.	Company.	Running steam launches.	Pivot guns.
	3	Pivot guns.	Running steam launches.	Company.	Battery.
	4	Running steam launches.	Pivot guns.	Battery.	Company.
Nov.....	1	Battalion infantry.	Battalion infantry.	Battalion infantry.	Battalion infantry.
	2	Seamanship.	Seamanship.	Seamanship.	Seamanship.
	3	Seamanship.	Seamanship.	Seamanship.	Seamanship.
	4	Battalion artillery.	Battalion artillery.	Battalion artillery.	Battalion artillery.
Dec	1	Small sword.	Steam.	Navy signals.	Steam.
	2	Steam.	Small sword.	Steam.	Navy signals.
	3	Navy signals.	Steam.	Small sword.	Steam.
	4				
Jan	1	Steam.	Navy signals.	Steam.	Small sword.
	2	Broad sword.	Steam.	Seamanship.	Steam.
	3	Steam.	Broad sword.	Steam.	Seamanship.
	4	Seamanship.	Steam.	Broad sword.	Steam.
SEMI-ANNUAL EXAMINATION.					
Feb	1	Steam.	Seamanship.	Steam.	Broad sword.
	2	Small sword.	Steam.	Practical ordnance.	Steam.
	3	Steam.	Small sword.	Steam.	Practical ordnance.
	4	Practical ordnance.	Steam.	Small sword.	Steam.
Mar	1	Steam.	Practical ordnance.	Steam.	Small sword.
	2	Seamanship.	Seamanship.	Seamanship.	Seamanship.
	3	Seamanship.	Seamanship.	Seamanship.	Seamanship.
	4	Broad sword (5).	Broad sword (5).	Broad sword (5).	Broad sword (5).
Apr	1	Seamanship (1).	Seamanship (1).	Seamanship (1).	Seamanship (1).
	2	General quarters.	General quarters.	General quarters.	General quarters.
	3	Target great guns (5).	Skirmish (5).	Steam tactics (5).	Target machine guns (5).
	4	General quarters (1).	General quarters (1).	General quarters (1).	General quarters (1).
May	1	Skirmish (5).	Target great guns (5).	Target machine guns (5).	Steam tactics (5).
	2	Seamanship (1).	Seamanship (1).	Seamanship (1).	Seamanship (1).
	3	Steam tactics (5).	Target machine guns (5).	Target great guns (5).	Skirmish (5).
	4	Seamanship (1).	Seamanship (1).	Seamanship (1).	Seamanship (1).
(Fifth week.)	1	Target machine guns (5).	Steam tactics (5).	Skirmish (5).	Target great guns (5).
	2	General quarters (1).	General quarters (1).	General quarters (1).	General quarters (1).
	3	Battalion infantry (5).	Battalion infantry (5).	Battalion infantry (5).	Battalion infantry (5).
	4	Seamanship (1).	Seamanship (1).	Seamanship (1).	Seamanship (1).
	1	Battalion artillery (3).	Battalion artillery (3).	Battalion artillery (3).	Battalion artillery (3).
	2	Seamanship (3).	Seamanship (3).	Seamanship (3).	Seamanship (3).
	3	General quarters (3).	General quarters (3).	General quarters (3).	General quarters (3).
	4	Battalion infantry.	Battalion infantry.	Battalion infantry.	Battalion infantry.
	T.	Battalion artillery.	Battalion artillery.	Battalion artillery.	Battalion artillery.
	W.	General quarters.	General quarters.	General quarters.	General quarters.
	Th.	Small sword.	Small sword.	Small sword.	Small sword.
	F.	Battalion infantry.	Battalion infantry.	Battalion infantry.	Battalion infantry.
June 1 to 19	S.	Seamanship.	Seamanship.	Seamanship.	Seamanship.
ANNUAL EXAMINATION.					

SECOND CLASS.

Months.	Weeks.	First division.	Second division.	Third division.	Fourth division.
July	3	Machine shop a. m. Target machine guns p. m.	Machine shop a. m. Myer's signals p. m.	Machine shop a. m. Mortar practice p. m.	Machine shop a. m. Boats under sail p. m.
	4	Machine shop a. m. Howitzers afloat p. m.	Machine shop a. m. Target machine guns p. m.	Machine shop a. m. Myer's signals p. m.	Machine shop a. m. Mortar practice p. m.
	1	Machine shop a. m. Target howitzers p. m.	Machine shop a. m. Howitzers afloat p. m.	Machine shop a. m. Target machine guns p. m.	Machine shop a. m. Myer's signals p. m.
	2	Running steam cut- ters a. m. Navy signals p. m.	Machine shop a. m. Target howitzers p. m.	Machine shop a. m. Howitzers afloat p. m.	Machine shop a. m. Target machine guns p. m.
	3	Machine shop a. m. Steam tactics p. m.	Running steam cut- ters a. m. Navy signals p. m.	Machine shop a. m. Target howitzers p. m.	Machine shop a. m. Howitzers afloat p. m.
	4	Machine shop a. m. Steam tactics p. m.	Machine shop a. m. Steam tactics p. m.	Running steam cut- ters a. m. Navy signals p. m.	Machine shop a. m. Target howitzers p. m.
	5	Machine shop a. m. Target practice great guns p. m.	Machine shop a. m. Steam tactics p. m.	Machine shop a. m. Steam tactics p. m.	Running steam cut- ters a. m. Navy signals p. m.
	1	Machine shop a. m. Boats under oars p. m.	Machine shop a. m. Target great guns p. m.	Machine shop a. m. Steam tactics p. m.	Machine shop a. m. Steam tactics p. m.
	2	Machine shop a. m. Boats under sail p. m.	Machine shop a. m. Boats under oars p. m.	Machine shop a. m. Target great guns p. m.	Machine shop a. m. Steam tactics p. m.
	3	Machine shop a. m. Mortar practice p. m.	Machine shop a. m. Boats under sail p. m.	Machine shop a. m. Boats under oars p. m.	Machine shop a. m. Target great guns p. m.
Aug.	4	Machine shop a. m. Myer's signals p. m.	Machine shop a. m. Mortar practice p. m.	Machine shop a. m. Boats under sail p. m.	Machine shop a. m. Boats under oars p. m.
	1	} On leave.	On leave.	On leave.	On leave.
	2				
	3				
	4				
Sept.	1	} On leave.	On leave.	On leave.	On leave.
	2				
	3				
	4				

THIRD CLASS.

Months.	Weeks.	First division.	Second division.	Third division.	Fourth division.
Oct.....	1	Company.	Battery.	Pivot guns.	Boats with oars.
	2	Battery.	Company.	Boats with oars.	Pivot guns.
	3	Pivot guns.	Boats with oars.	Company.	Battery.
	4	Boats with oars.	Pivot guns.	Battery.	Company.
Nov.....	1	Battalion infantry.	Battalion infantry.	Battalion infantry.	Battalion infantry.
	2	Seamanship.	Seamanship.	Seamanship.	Seamanship.
	3	Seamanship.	Seamanship.	Seamanship.	Seamanship.
	4	Battalion artillery.	Battalion artillery.	Battalion artillery.	Battalion artillery.
Dec.....	1	Small sword.	Seamanship.	Broadside guns.	Rigging loft.
	2	Rigging loft.	Small sword.	Seamanship.	Broadside guns.
	3	Broadside guns.	Rigging loft.	Small sword.	Seamanship.
	4				
Jan.....	1	Seamanship.	Broadside guns.	Rigging loft.	Small sword.
	2	Small sword.	Target small arms.	Broadside guns.	Rigging loft.
	3	Rigging loft.	Small sword.	Target small arms.	Broadside guns.
	4	Broadside guns.	Rigging loft.	Small sword.	Target small arms.
	5	SEMI-ANNUAL EXAMINATION.			
Feb.....	1	Target small arms.	Broadside guns.	Rigging loft.	Small sword.
	2	Small sword.	Target pistol.	Myer's signals.	Rigging loft.
	3	Rigging loft.	Small sword.	Target pistol.	Myer's signals.
	4	Myer's signals.	Rigging loft.	Small sword.	Target pistol.
Mar.....	1	Target pistol.	Myer's signals.	Rigging loft.	Small sword.
	2	Seamanship.	Seamanship.	Seamanship.	Seamanship.
	3	Seamanship.	Seamanship.	Seamanship.	Seamanship.
	4	Pivot guns (5).	Pivot guns (5).	Pivot guns (5).	Pivot guns (5).
		Seamanship (1).	Seamanship (1).	Seamanship (1).	Seamanship (1).
Apr.....	1	General quarters.	General quarters.	General quarters.	General quarters.
	2	Target small arms (5).	Skirmish (5).	Seamanship (5).	Boats with oars (5).
	3	General quarters (1).	General quarters (1).	General quarters (1).	General quarters (1).
		Skirmish (5).	Target small arms (5).	Boats with oars (5).	Seamanship.
	4	Seamanship (1).	Seamanship (1).	Seamanship (1).	
		Seamanship.	Boats with oars (5).	Target small arms (5).	Skirmish (5).
May.....	1	Boats with oars (5).	Seamanship (1).	Seamanship (1).	Seamanship (1).
		General quarters (1).	Seamanship (5).	Skirmish (5).	Target small arms (5).
	2	Battalion infantry (5).	General quarters (1).	General quarters (1).	General quarters (1).
		Seamanship (1).	Battalion infantry (5).	Battalion infantry (5).	Battalion infantry (5).
	3	Battalion artillery (3).	Seamanship (1).	Seamanship (1).	Seamanship (1).
		Seamanship (3).	Battalion artillery (3).	Battalion artillery (3).	Battalion artillery (3).
	4	Small sword (3).	Seamanship (3).	Seamanship (3).	Seamanship (3).
		General quarters (3).	Small sword (3).	Small sword (3).	Small sword (3).
(Fifth week.)	M.	Battalion infantry.	General Quarters (3).	General quarters (3).	General quarters (3).
	T.	Battalion artillery.	Battalion infantry.	Battalion infantry.	Battalion infantry.
	W.	General quarters.	Battalion artillery.	Battalion artillery.	Battalion artillery.
	Th.	Boats with oars.	General quarters.	General quarters.	General quarters.
	F.	Battalion infantry.	Boats with oars.	Boats with oars.	Boats with oars.
	S.	Seamanship.	Battalion infantry.	Battalion infantry.	Battalion infantry.
June 1 to 10.	} ..	ANNUAL EXAMINATION.			
June 10 to Aug. 28.	} ..	Practice cruise.			
Sept.....	.....	On leave.			

FOURTH CLASS.

Months.	Weeks.	First division.	Second division.	Third division.	Fourth division.
Oct.....	1	Company.	Battery.	Gymnastics.	Boats with oars.
	2	Battery.	Company.	Boats with oars.	Gymnastics.
	3	Gymnastics.	Boats with oars.	Company.	Battery.
Nov.....	4	Boats with oars.	Gymnastics.	Battery.	Company.
	1	Battalion infantry.	Battalion infantry.	Battalion infantry.	Battalion infantry.
	2	Seamanship.	Seamanship.	Seamanship.	Seamanship.
	3	Seamanship.	Seamanship.	Seamanship.	Seamanship.
	4	Battalion artillery.	Battalion artillery.	Battalion artillery.	Battalion artillery.
Dec.....	1	Dancing.	Gymnastics.	Broadside guns.	Rigging loft.
	2	Rigging loft.	Dancing.	Gymnastics.	Broadside guns.
	3	Broadside guns.	Rigging loft.	Dancing.	Gymnastics.
	4				
Jan.....	1	Gymnastics.	Broadside guns.	Rigging loft.	Dancing.
	2	Dancing.	Gymnastics.	Broadside guns.	Rigging loft.
	3	Rigging loft.	Dancing.	Gymnastics.	Broadside guns.
	4	Broadside guns.	Rigging loft.	Dancing.	Gymnastics.
	5	SEMI-ANNUAL EXAMINATION.			
Feb.....	1	Gymnastics.	Broadside guns.	Rigging loft.	Dancing.
	2	Dancing.	Gymnastics.	Dancing.	Rigging loft.
	3	Rigging loft.	Dancing.	Gymnastics.	Dancing.
	4	Dancing.	Rigging loft.	Dancing.	Gymnastics.
Mar.....	1	Gymnastics.	Dancing.	Rigging loft.	Dancing.
	2	Seamanship.	Seamanship.	Seamanship.	Seamanship.
	3	Seamanship.	Seamanship.	Seamanship.	Seamanship.
	4	Company (5).	Company (5).	Company (5).	Company (5).
Apr.....	1	Seamanship (1).	Seamanship (1).	Seamanship (1).	Seamanship (1).
	2	General quarters.	General quarters.	General quarters.	General quarters.
	3	Rigging loft (5).	Skirmish (5).	Seamanship (5).	Boats with oars (5).
	4	General quarters (1).	General quarters (1).	General quarters (1).	General quarters (1).
	5	Skirmish (5).	Rigging loft (5).	Boats with oars (5).	Seamanship.
	6	Seamanship (1).	Seamanship (1).	Seamanship (1).	Seamanship.
	7	Seamanship.	Boats with oars (5).	Rigging loft (5).	Skirmish (5).
May....	1	Boats with oars (5).	Seamanship (1).	Seamanship (1).	Seamanship (1).
	2	General quarters (1).	General quarters (1).	General quarters (1).	General quarters (1).
	3	Battalion infantry (5).	Battalion infantry (5).	Battalion infantry (5).	Battalion infantry (5).
	4	Seamanship (1).	Seamanship (1).	Seamanship (1).	Seamanship (1).
	5	Battalion artillery (3).	Battalion artillery (3).	Battalion artillery (3).	Battalion artillery (3).
	6	Seamanship (3).	Seamanship (3).	Seamanship (3).	Seamanship (3).
	7	Seamanship (3).	Seamanship (3).	Seamanship (3).	Seamanship (3).
	8	General quarters (3).	General quarters (3).	General quarters (3).	General quarters (3).
(Fifth week.)	M.	Battalion infantry.	Battalion infantry.	Battalion infantry.	Battalion infantry.
	T.	Battalion artillery.	Battalion artillery.	Battalion artillery.	Battalion artillery.
	W.	General quarters.	General quarters.	General quarters.	General quarters.
	Th.	Boats with oars.	Boats with oars.	Boats with oars.	Boats with oars.
	F.	Battalion infantry.	Battalion infantry.	Battalion infantry.	Battalion infantry.
	S.	Seamanship.	Seamanship.	Seamanship.	Seamanship.
June 1 to 10.	ANNUAL EXAMINATION.				
June 10 to Aug. 28.	Practice cruise.				
Sept.....	1	School of soldier.*	School of soldier.*	School of soldier.*	School of soldier.*
	2	School of soldier.*	School of soldier.*	School of soldier.*	School of soldier.*
	3	School of soldier.*	School of soldier.*	School of soldier.*	School of soldier.*
	4	Sch. sec. howitzer.	Sch. sec. howitzer.	Sch. sec. howitzer.	Sch. sec. howitzer.
	5	School of soldier.*	School of soldier.*	School of soldier.*	School of soldier.*
	6	Sch. sec. howitzer.	Sch. sec. howitzer.	Sch. sec. howitzer.	Sch. sec. howitzer.

* Swimming daily.

Kind of instruction.	During the academic year.				Total number of instructions during academic year.	During summer months.				During month of September, fourth class.	Total number of instructions, exclusive of practice cruise.
	First class.	Second class.	Third class.	Fourth class.		First class.	Second class.	Third class.	Fourth class.		
Seamanship, including stripping and rigging Wyoming	37	41	43	40	161	(*)	.	(*)	(*)	.	161
Rigging loft	.	.	18	23	41	.	.	.	.	.	41
Boats under oars	.	.	12	12	24	(*)	5	(*)	(*)	.	27
Boats under sail	.	.	.	.	.	(*)	5	(*)	(*)	.	5
Naval tactics with steam launches	14	5	.	.	19	.	10	.	.	.	29
Navy signals, day	.	6	.	.	6	(*)	5	.	.	.	11
Navy signals, night	.	.	.	.	.	(*)	5	.	.	.	5
Myers' signals, day	.	.	6	.	6	.	5	.	.	.	11
Myers' signals, night	.	.	.	.	.	.	5	.	.	.	5
Monitor, with great gun practice	6	.	.	.	6	.	.	.	.	.	6
General quarters	8	8	8	8	32	(*)	.	(*)	(*)	.	32
General quarters, with target practice	4	4	4	4	16	(*)	.	(*)	(*)	.	16
Target practice, great guns	10	5	.	.	15	.	5	.	.	.	20
Pivot guns	.	6	11	.	17	.	.	.	.	.	17
Broadside guns	.	.	12	12	24	(*)	.	(*)	(*)	.	24
Mortars	.	.	.	.	.	.	5	.	.	.	5
Torpedoes	5	.	.	.	5	.	.	.	.	.	5
Practical ordnance	12	6	.	.	18	.	.	.	.	.	18
Howitzers afloat	.	.	.	.	.	.	5	.	.	.	5
Target practice, Howitzers	.	.	.	.	.	.	5	.	.	.	5
School of section	.	.	.	.	.	.	.	.	.	10	10
School of battery	5	6	6	6	23	.	.	.	.	.	23
School of battalion artillery	10	10	10	10	40	.	.	.	.	.	40
Target practice, machine guns	.	5	.	.	5	.	5	.	.	.	10
Target practice, small arms	.	.	11	.	11	.	.	.	.	.	11
Target practice, pistols	.	.	6	.	6	.	.	.	.	.	6
School of the soldier	.	.	.	.	.	.	.	.	.	34	34

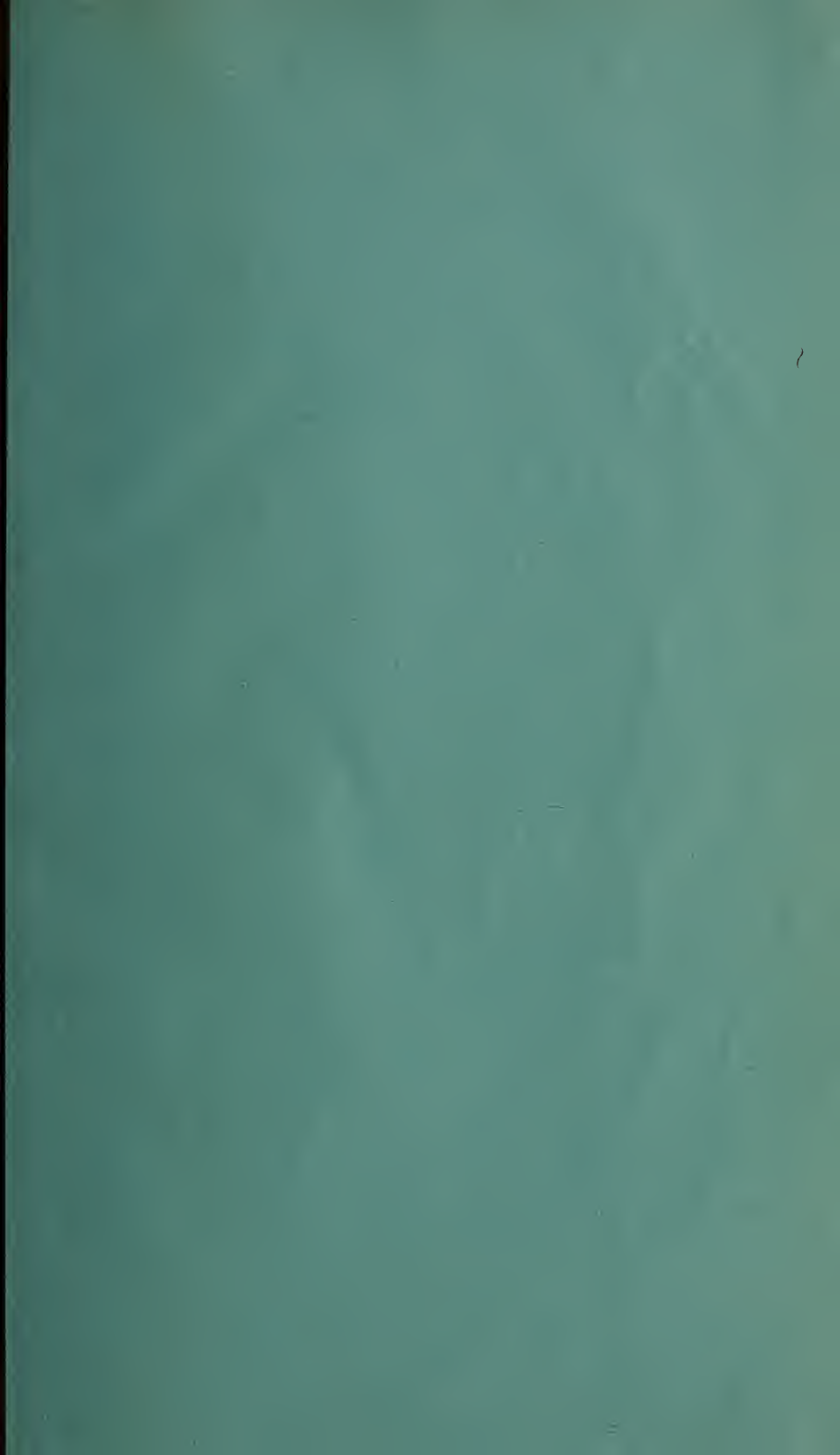
SUMMARY OF PRACTICAL INSTRUCTIONS—Continued.

Kind of instruction.	During the academic year.				Total number of instructions during academic year.	During summer months.				During month of September, fourth class.	Total number of instructions, exclusive of practice cruise.
	First class.	Second class.	Third class.	Fourth class.		First class.	Second class.	Third class.	Fourth class.		
School of the company	5	6	6	11	28	.	.	.	.	.	28
School of the battalion, infantry	12	13	13	13	51	.	.	.	.	.	51
Skirmish drill	5	5	5	5	20	.	.	.	.	.	20
Broad sword	12	11	.	.	23	.	.	.	.	.	23
Small sword	6	13	21	.	40	.	.	.	.	.	40
Practical instruction in deviation of compass	5	.	.	.	5	(*)	.	.	.	.	5
Practical instruction, navigation	†14	†13	.	.	.	(*)	.	.	.	.	†27
Practical instruction, surveying	†10	.	.	.	.	.	.	.	.	.	†10
Machine shop and running shop engines	36, and †13	36	.	.	72	.	60	.	.	.	132, and †13
Running steam launches . . . . .	.	6	.	.	6	.	6	.	.	.	12
Practical instruction in chemistry . . . . .	.	.	†13	.	.	.	.	.	.	.	†13
Gymnastics . . . . .	.	.	.	24	24	.	.	.	.	.	24
Swimming . . . . .	.	.	.	.	.	.	.	.	.	.	24
Dancing . . . . .	.	.	.	24	24	.	.	.	.	24	24

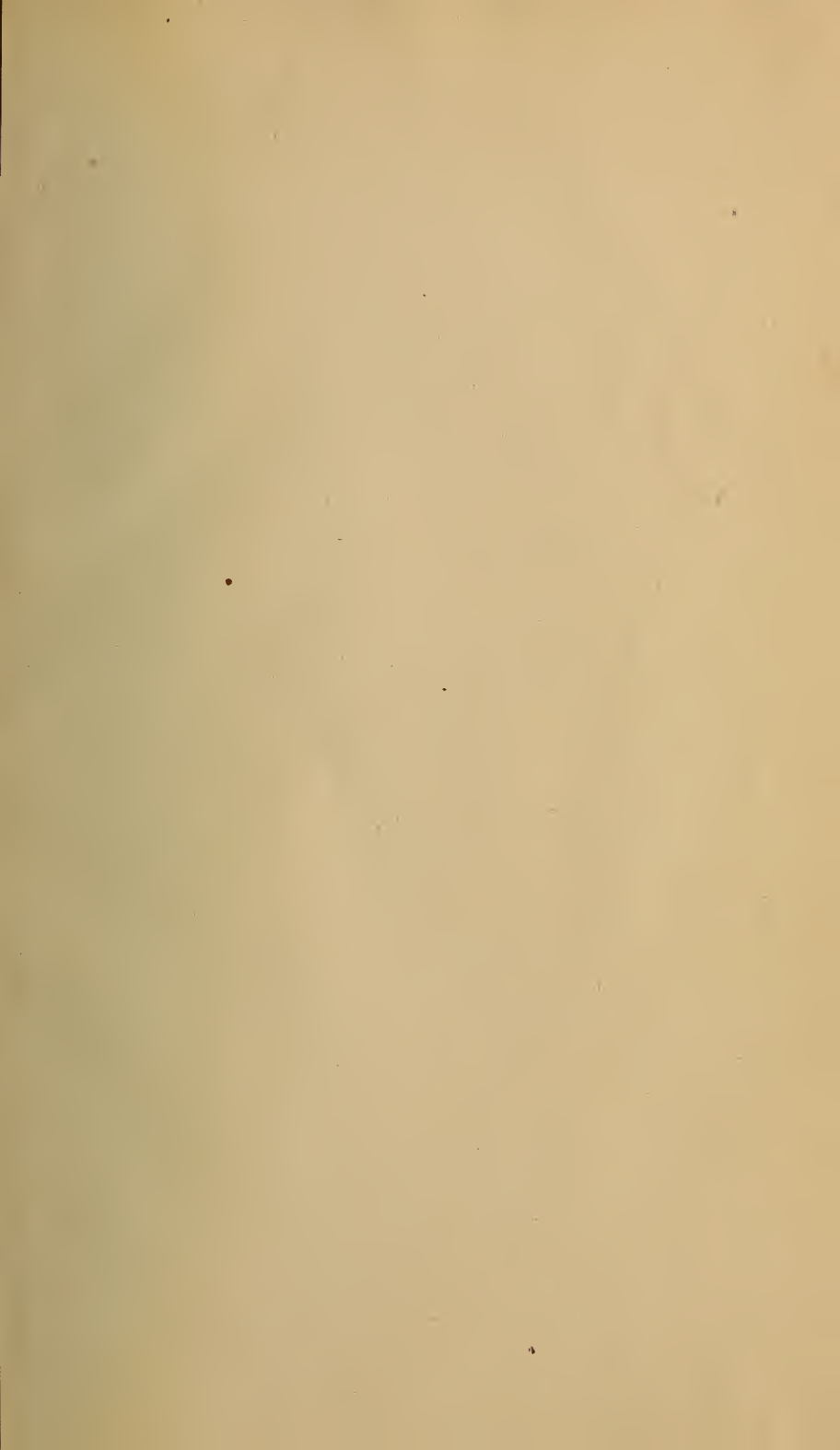
* Practice cruise.

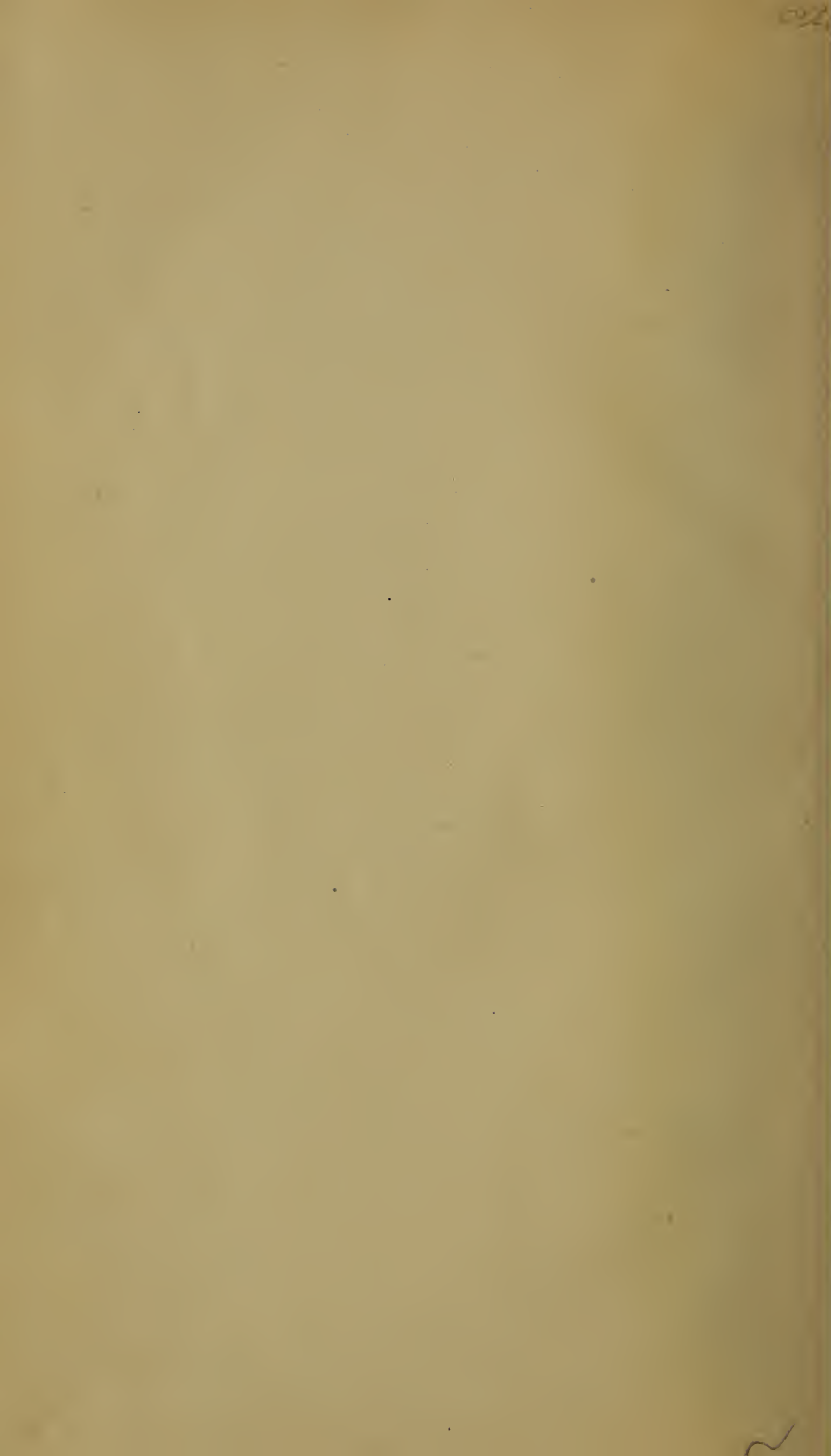
† Study periods.

The instructions in seamanship and gunnery on board of the Wyoming, Passaic, and Standish are also made instructions in running and managing the engines and boilers of those vessels. The instructions in naval tactics are also made instructions in running and managing the engines and boilers of the steam launches when practicable.

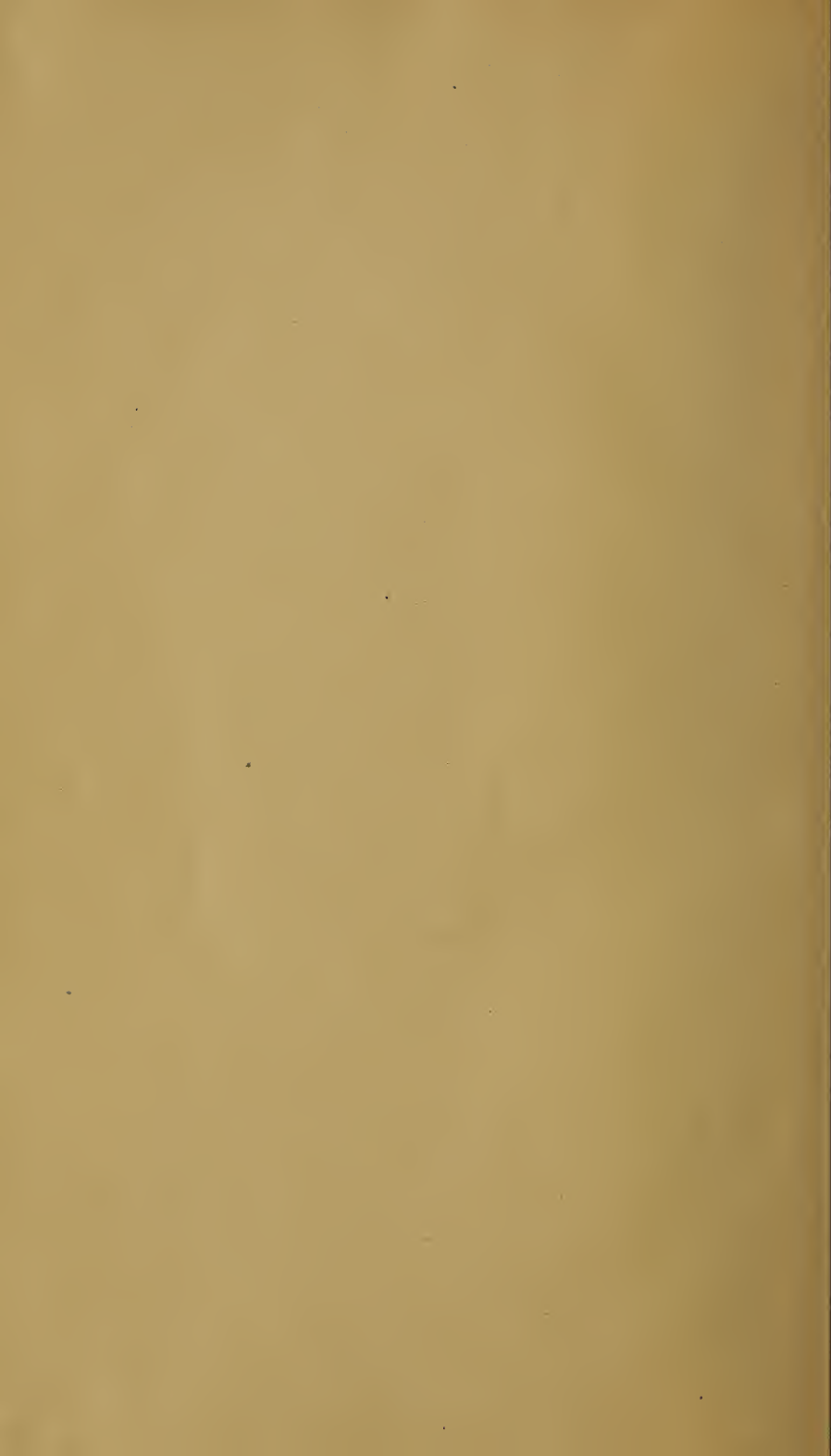




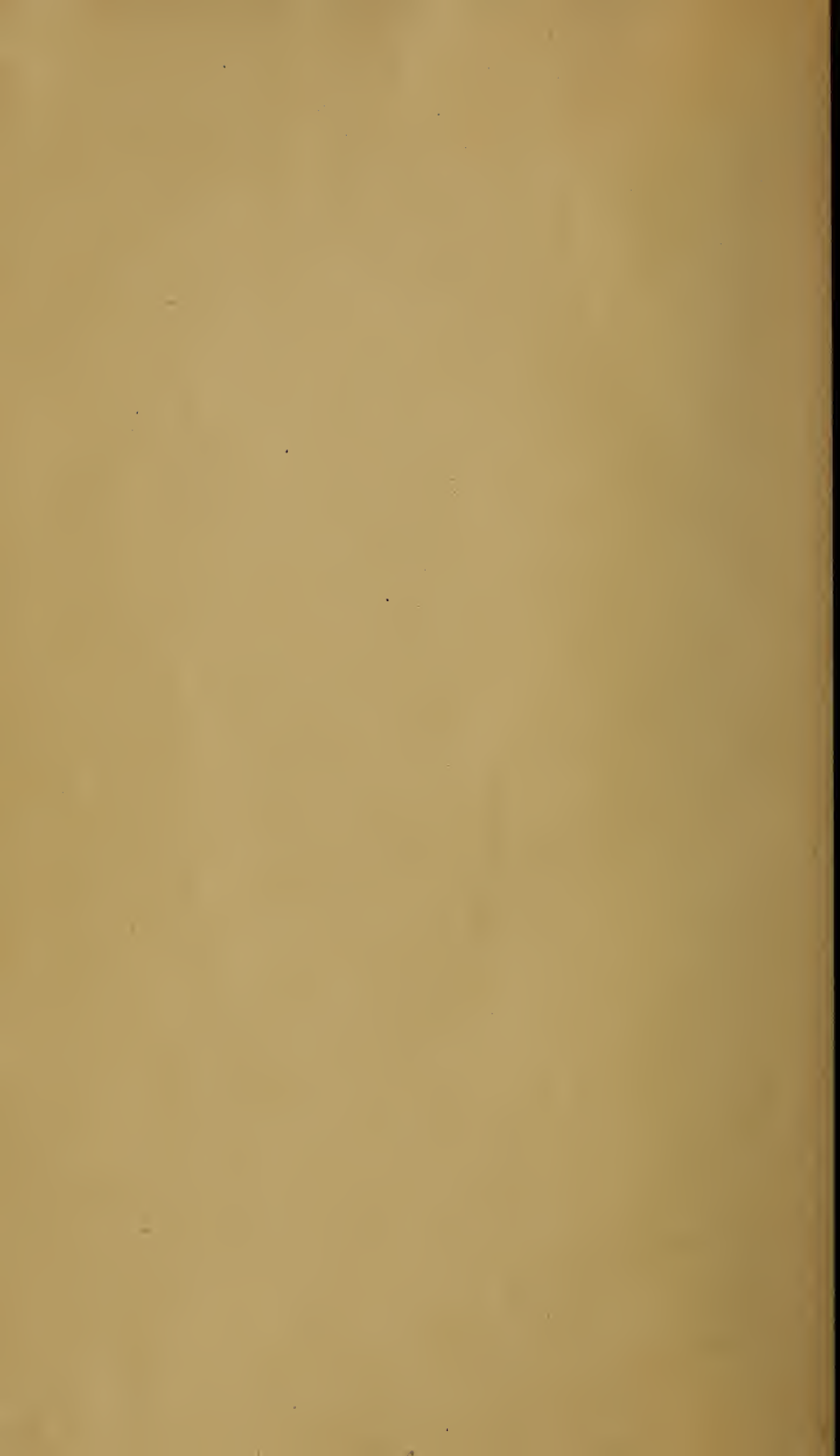


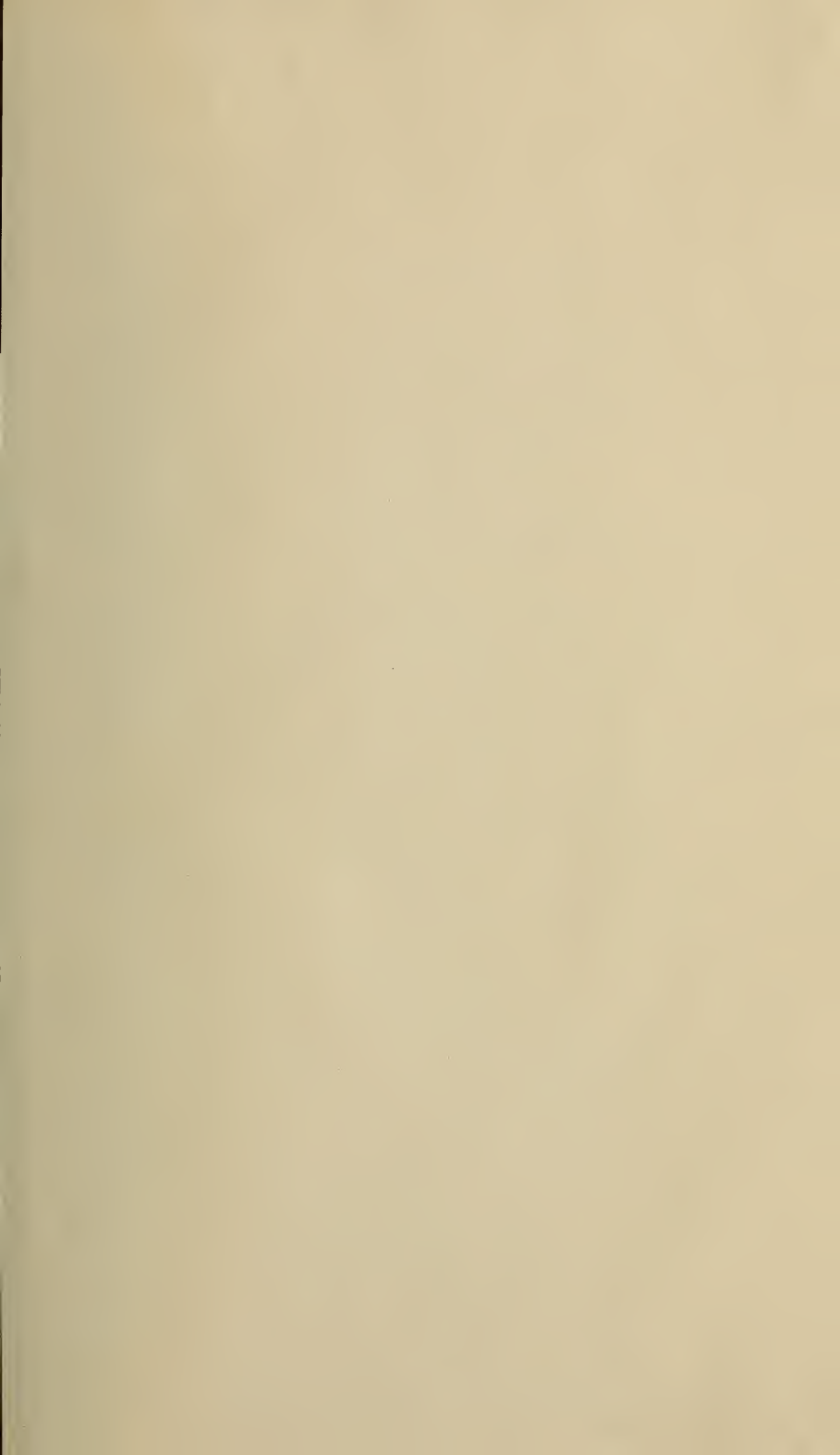


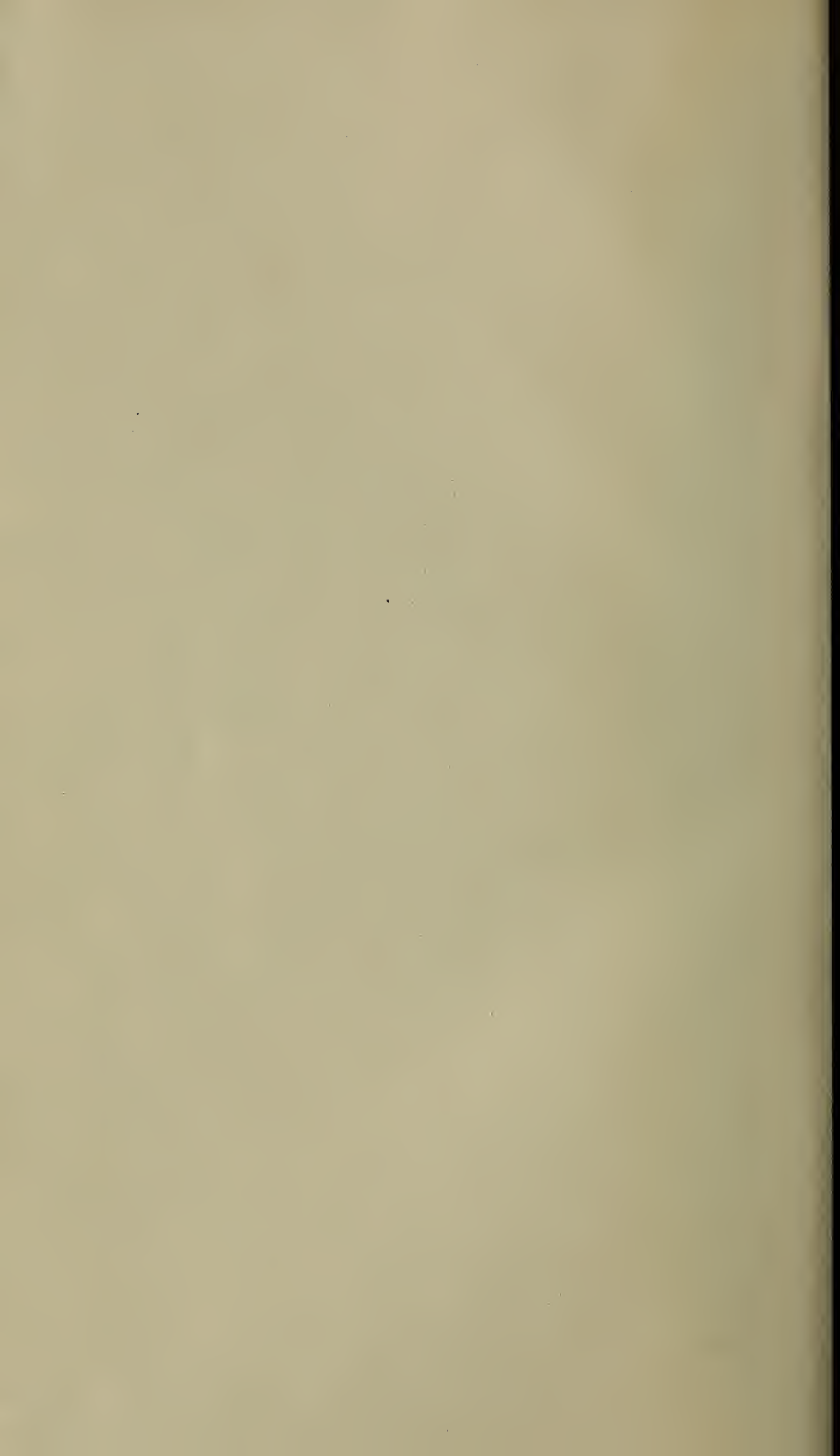


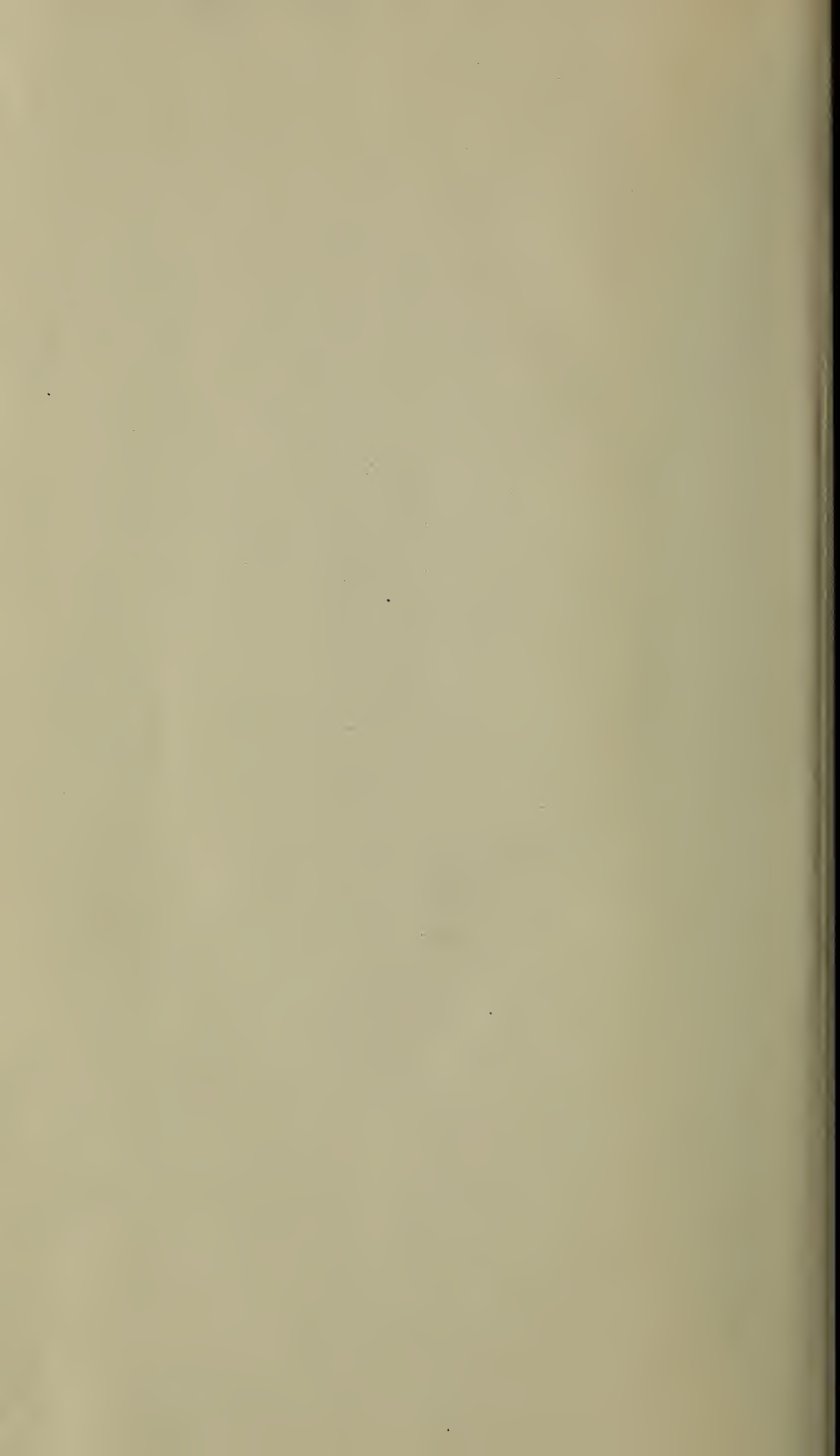












Annual register

1884-1885

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